

# SEQUENCE LISTING

<110> JIANGSU HENGRUI PHARMACEUTICALS CO., LTD.  
SHANGHAI HENGRUI PHARMACEUTICAL CO., LTD.

<120> ANTIGEN-BINDING MOLECULE

<130> 722049CPCT

<150> CN202110527339.7

<151> 2021-05-14

<160> 181

<170> SIPOSequenceListing 1.0

<210> 1

<211> 330

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> Heavy chain constant region sequence of IgG1

<400> 1

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

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly  
 210 215 220  
 Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu  
 225 230 235 240  
 Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr  
 245 250 255  
 Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn  
 260 265 270  
 Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe  
 275 280 285  
 Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn  
 290 295 300  
 Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr  
 305 310 315 320  
 Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
 325 330

<210> 2  
 <211> 330  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Heavy chain constant region sequence of knob-IgG1

<400> 2  
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys  
 1 5 10 15  
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr  
 20 25 30  
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser  
 35 40 45  
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser  
 50 55 60  
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr  
 65 70 75 80  
 Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys  
 85 90 95  
 Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys  
 100 105 110  
 Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro  
 115 120 125  
 Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys  
 130 135 140  
 Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp  
 145 150 155 160  
 Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu  
 165 170 175  
 Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu  
 180 185 190  
 His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn |     |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly |     |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |
| Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu |     |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |
| Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser | Cys | Ala | Val | Lys | Gly | Phe | Tyr |     |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn |     |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |
| Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe |     |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |
| Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn |     |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |
| Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr |     |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     | 320 |
| Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |     |     |     |     |     |     |     |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     |     |     |

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

<220>  
 <221> DOMAIN  
 <223> kappa light chain constant region sequence

|         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| <400> 4 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| Arg     | Thr | Val | Ala | Ala | Pro | Ser | Val | Phe | Ile | Phe | Pro | Pro | Ser | Asp | Glu |  |
| 1       |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |  |
| Gln     | Leu | Lys | Ser | Gly | Thr | Ala | Ser | Val | Val | Cys | Leu | Leu | Asn | Asn | Phe |  |
|         |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |  |
| Tyr     | Pro | Arg | Glu | Ala | Lys | Val | Gln | Trp | Lys | Val | Asp | Asn | Ala | Leu | Gln |  |
|         |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |  |
| Ser     | Gly | Asn | Ser | Gln | Glu | Ser | Val | Thr | Glu | Gln | Asp | Ser | Lys | Asp | Ser |  |
|         | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |
| Thr     | Tyr | Ser | Leu | Ser | Ser | Thr | Leu | Thr | Leu | Ser | Lys | Ala | Asp | Tyr | Glu |  |
| 65      |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |
| Lys     | His | Lys | Val | Tyr | Ala | Cys | Glu | Val | Thr | His | Gln | Gly | Leu | Ser | Ser |  |
|         |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |  |
| Pro     | Val | Thr | Lys | Ser | Phe | Asn | Arg | Gly | Glu | Cys |     |     |     |     |     |  |
|         |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     |     |     |  |

<210> 5  
 <211> 106  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> lambda light chain constant region sequence

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

<210> 6  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> VH sequence of F0 antibody

<400> 6  
 Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Thr  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Ser  
 20 25 30  
 Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Val Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Ser Ala Arg Leu Tyr Ala Ser Phe Asp Tyr Trp Gly Gln Gly  
 100 105 110  
 Ala Leu Val Thr Val Ser Ser  
 115

<210> 7  
 <211> 110  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN

<223> VL sequence of F0 antibody

<400> 7

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

<210> 8

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> VH sequence of N0 antibody

<400> 8

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

<210> 9

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN  
 <223> VL sequence of N0 antibody

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

<210> 10  
 <211> 120  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of S0 antibody

<400> 10  
 Glu Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Gly Gly  
 1 5 10 15  
 Ser Leu Ser Leu Ser Cys Ala Ala Ser Gly Phe Val Phe Ser Ser Tyr  
 20 25 30  
 Asp Met Ser Trp Val Arg Gln Thr Pro Glu Arg Gly Leu Glu Trp Val  
 35 40 45  
 Ala Tyr Ile Ser Ser Gly Gly Gly Ile Thr Tyr Ala Pro Ser Thr Val  
 50 55 60  
 Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Ala His Tyr Phe Gly Ser Ser Gly Pro Phe Ala Tyr Trp Gly Gln  
 100 105 110  
 Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 11  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of S0 antibody

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

<210> 12  
 <211> 121  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of V0 antibody

<400> 12  
 Gln Val Gln Leu Gln Gln Ser Ala Ala Glu Leu Ala Arg Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr  
 20 25 30  
 Thr Ile His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Tyr Ile Asn Pro Asn Ser Arg Asn Thr Asp Tyr Asn Gln Lys Phe  
 50 55 60  
 Lys Asp Glu Thr Thr Leu Thr Ala Asp Arg Ser Ser Ser Thr Ala Tyr  
 65 70 75 80  
 Met Gln Leu Ile Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Tyr Ser Gly Ser Thr Pro Tyr Trp Tyr Phe Asp Val Trp Gly  
 100 105 110  
 Ala Gly Thr Thr Val Thr Val Ser Ser  
 115 120

<210> 13  
 <211> 106  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of V0 antibody

<400> 13  
 Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Leu Ser Ala Ser Pro Gly  
 1 5 10 15  
 Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Tyr Met  
 20 25 30  
 Asn Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr  
 35 40 45  
 Ala Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Val Ser  
 50 55 60  
 Val Ser Gly Thr Ser His Ser Leu Thr Ile Ser Arg Val Glu Ala Glu  
 65 70 75 80  
 Asp Ala Ala Thr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr  
 85 90 95  
 Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys  
 100 105

<210> 14  
 <211> 120  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of J0 antibody

<400> 14  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp Tyr  
 20 25 30  
 Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Gly His Ile Lys Ser Lys Thr Asp Ala Gly Thr Thr Asp Tyr Ala Ala  
 50 55 60  
 Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80  
 Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95  
 Tyr Cys Ala Arg Glu Ile Tyr Tyr Tyr Ala Phe Asp Ser Trp Gly Gln  
 100 105 110  
 Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 15  
 <211> 107  
 <212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> VL sequence of J0 antibody

<400> 15

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

<210> 16

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> VH sequence of H0 antibody

<400> 16

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

<210> 17

<211> 107

<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> VL sequence of H0 antibody

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

<210> 18  
<211> 116  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> VH sequence of R0 antibody

<400> 18  
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Leu Ser Leu Thr Ser Asn  
20 25 30  
Ser Val Asn Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Gly Leu Ile Trp Ser Asn Gly Asp Thr Asp Tyr Asn Ser Ala Ile Lys  
50 55 60  
Ser Arg Phe Thr Ile Ser Arg Asp Thr Ser Lys Ser Thr Val Tyr Leu  
65 70 75 80  
Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95  
Arg Glu Tyr Tyr Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110  
Thr Val Ser Ser  
115

<210> 19

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

<220>  
 <221> DOMAIN  
 <223> VL sequence of R0 antibody

<400> 19  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Leu Ala Ser Glu Gly Ile Ser Ser Tyr  
 20 25 30  
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Gly Ala Asn Ser Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Ala Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Lys Phe Pro Asn  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys  
 100 105

<210> 20  
 <211> 123  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of B0 antibody

<400> 20  
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Asn Asn Asn  
 20 25 30  
 Ala Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Gly Ile Ile Pro Met Phe Gly Thr Ala Lys Tyr Ser Gln Asn Phe  
 50 55 60  
 Gln Gly Arg Val Ala Ile Thr Ala Asp Glu Ser Thr Gly Thr Ala Ser  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Ser Arg Asp Leu Leu Leu Phe Pro His His Ala Leu Ser Pro  
 100 105 110  
 Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser  
 115 120

<210> 21  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> VL sequence of B0 antibody

<400> 21  
 Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
 1 5 10 15  
 Thr Val Arg Val Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala  
 20 25 30  
 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser  
 50 55 60  
 Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Arg Asp Ser Ser Gly Asn His  
 85 90 95  
 Trp Val Phe Gly Gly Gly Thr Glu Leu Thr Val Leu  
 100 105

<210> 22  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> VH sequence of U0 antibody

<400> 22  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu  
 1 5 10 15  
 Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Thr Tyr  
 20 25 30  
 Trp Leu Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Asp Trp Ile  
 35 40 45  
 Gly Ile Met Ser Pro Val Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe  
 50 55 60  
 Gln Gly Gln Val Thr Met Ser Val Asp Lys Ser Ile Thr Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Trp Asn Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys  
 85 90 95  
 Ala Arg Arg Arg Pro Gly Gln Gly Tyr Phe Asp Phe Trp Gly Gln Gly  
 100 105 110  
 Thr Leu Val Thr Val Ser Ser  
 115

<210> 23  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of U0 antibody

<400> 23  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp  
 20 25 30  
 Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Lys Ser Leu Ile  
 35 40 45  
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ile Tyr Pro Tyr  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 24  
 <211> 122  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of D0 antibody

<400> 24  
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
 20 25 30  
 Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ser Gly Ile Thr Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Lys Asp Pro Gly Thr Thr Val Ile Met Ser Trp Phe Asp Pro Trp  
 100 105 110  
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser

115

120

<210> 25  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of D0 antibody

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

<210> 26  
 <211> 121  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of I0 antibody

<400> 26  
 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 Gly Phe Ser Leu Ile Gly Tyr  
 20 25 30  
 Asp Leu Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Ile Ile Trp Gly Asp Gly Thr Thr Asp Tyr Asn Ser Ala Val Lys  
 50 55 60  
 Ser Arg Val Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80  
 Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95  
 Arg Gly Gly Tyr Trp Tyr Ala Thr Ser Tyr Tyr Phe Asp Tyr Trp Gly  
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 27  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of I0 antibody

<400> 27  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
 20 25 30  
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Tyr Thr Ser Arg Phe His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Glu His Thr Leu Pro Tyr  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 28  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of C0 antibody

<400> 28  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr  
 20 25 30  
 His Met Asn Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met  
 35 40 45  
 Gly Asp Ile Asn Pro Asp Ile Gly Gly Thr Ser Tyr Asn Gln Asn Phe  
 50 55 60  
 Lys Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala Ser Thr Ala Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Trp Asp Phe Asp Ser Phe Ala Asn Trp Gly Gln Gly Thr Leu

|                     |     |     |     |
|---------------------|-----|-----|-----|
|                     | 100 | 105 | 110 |
| Val Thr Val Ser Ser |     |     |     |
| 115                 |     |     |     |

<210> 29  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of C0 antibody

<400> 29  
 Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
 1 5 10 15  
 Glu Arg Ala Thr Ile Asn Cys Arg Ala Ser Glu Ser Val Ser Ile Ile  
 20 25 30  
 Gly Thr Asn Leu Ile His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
 35 40 45  
 Lys Leu Leu Ile Tyr His Ala Ser Asn Leu Glu Thr Gly Val Pro Asp  
 50 55 60  
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser  
 65 70 75 80  
 Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Leu Gln Ser Arg  
 85 90 95  
 Lys Ile Pro Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
 100 105 110

<210> 30  
 <211> 104  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> IL6Ra.0 chain sequence

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

Pro Glu Ala Met Gly Thr Pro Trp  
100

<210> 31  
<211> 108  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> IL6Rb.0 chain sequence

<400> 31  
Phe Asp Pro Val Tyr Lys Val Lys Pro Asn Pro Pro His Asn Leu Ser  
1 5 10 15  
Val Ile Asn Ser Glu Glu Leu Ser Ser Ile Leu Lys Leu Thr Trp Thr  
20 25 30  
Asn Pro Ser Ile Lys Ser Val Ile Ile Leu Lys Tyr Asn Ile Gln Tyr  
35 40 45  
Arg Thr Lys Asp Ala Ser Thr Trp Ser Gln Ile Pro Pro Glu Asp Thr  
50 55 60  
Ala Ser Thr Arg Ser Ser Phe Thr Val Gln Asp Leu Lys Pro Phe Thr  
65 70 75 80  
Glu Tyr Val Phe Arg Ile Arg Cys Met Lys Glu Asp Gly Lys Gly Tyr  
85 90 95  
Trp Ser Asp Trp Ser Glu Glu Ala Ser Gly Ile Thr  
100 105

<210> 32  
<211> 98  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> T.0 chain sequence

<400> 32  
Gly Ile Pro Pro Lys Ile Glu Ala Leu Pro Ser Asp Ile Ser Ile Asp  
1 5 10 15  
Glu Gly Lys Val Leu Thr Val Ala Cys Ala Phe Thr Gly Glu Pro Thr  
20 25 30  
Pro Glu Val Thr Trp Ser Cys Gly Gly Arg Lys Ile His Ser Gln Glu  
35 40 45  
Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp Leu Thr Thr Leu Ile  
50 55 60  
Ile Met Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Thr Leu Ser Leu  
65 70 75 80  
Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
85 90 95  
Ser Ile

<210> 33  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.0 chain sequence

<400> 33  
 Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Lys Ala Phe Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Cys Gln Ile Val Gly Asn Pro Thr  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Thr Ile Leu  
 50 55 60  
 Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Cys Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Ala Val Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 34  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0L.0 chain sequence

<400> 34  
 Gln Gly Ser Pro Pro Cys Phe Leu Arg Phe Pro Arg Pro Val Arg Val  
 1 5 10 15  
 Val Ser Gly Ala Glu Ala Glu Leu Lys Cys Val Val Leu Gly Glu Pro  
 20 25 30  
 Pro Pro Val Val Val Trp Glu Lys Gly Gly Gln Gln Leu Ala Ala Ser  
 35 40 45  
 Glu Arg Leu Ser Phe Pro Ala Asp Gly Ala Glu His Gly Leu Leu Leu  
 50 55 60  
 Thr Ala Ala Leu Pro Thr Asp Ala Gly Val Tyr Val Cys Arg Ala Arg  
 65 70 75 80  
 Asn Ala Ala Gly Glu Ala Tyr Ala Ala Ala Val Thr Val Leu Glu  
 85 90 95  
 Pro Pro

<210> 35  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.1 chain sequence

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

<210> 36  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.2 chain sequence

<400> 36  
 Gly Ile Pro Pro Lys Ile Glu Ala Leu Pro Ser Asp Ile Ser Ile Asp  
 1 5 10 15  
 Glu Gly Lys Cys Leu Thr Val Ala Ser Ala Phe Thr Gly Glu Pro Thr  
 20 25 30  
 Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu  
 35 40 45  
 Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp Leu Thr Thr Leu Ile  
 50 55 60  
 Ile Met Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Thr Leu Ser Leu  
 65 70 75 80  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
 85 90 95  
 Ser Ile

<210> 37  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.3 chain sequence

<400> 37  
 Gly Ile Pro Pro Lys Ile Glu Ala Leu Pro Ser Asp Ile Ser Ile Asp  
 1 5 10 15  
 Glu Gly Lys Val Leu Thr Val Ala Ser Cys Phe Thr Gly Glu Pro Thr  
 20 25 30  
 Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu  
 35 40 45  
 Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp Leu Thr Thr Leu Ile  
 50 55 60  
 Ile Met Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Thr Leu Ser Leu  
 65 70 75 80  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
 85 90 95  
 Ser Ile

<210> 38  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.4 chain sequence

<400> 38  
 Gly Ile Pro Pro Lys Ile Glu Ala Leu Pro Ser Asp Ile Ser Ile Asp  
 1 5 10 15  
 Glu Gly Lys Val Leu Cys Val Ala Ser Ala Phe Thr Gly Glu Pro Thr  
 20 25 30  
 Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu  
 35 40 45  
 Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp Leu Thr Thr Leu Ile  
 50 55 60  
 Ile Met Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Thr Leu Ser Leu  
 65 70 75 80  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
 85 90 95  
 Ser Ile

<210> 39

<211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.5 chain sequence

<400> 39  
 Lys Ala Gly Ile Arg Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ser  
 1 5 10 15  
 Asp Ile Ser Ile Asp Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe  
 20 25 30  
 Thr Gly Glu Pro Thr Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys  
 35 40 45  
 Ile His Ser Gln Glu Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp  
 50 55 60  
 Leu Thr Thr Leu Ile Ile Met Asp Val Gln Lys Gln Asp Gly Gly Leu  
 65 70 75 80  
 Tyr Thr Leu Ser Leu Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val  
 85 90 95  
 Asn Ile His Ile Arg Ser Ile  
 100

<210> 40  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.1-L1 chain sequence

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

<210> 41  
 <211> 108

<212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.1-L2 chain sequence

<400> 41  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Ile Pro Pro Lys Ile  
 1 5 10 15  
 Glu Cys Leu Pro Ser Asp Ile Ser Ile Asp Glu Gly Lys Val Leu Thr  
 20 25 30  
 Val Ala Ser Ala Phe Thr Gly Glu Pro Thr Pro Glu Val Thr Trp Ser  
 35 40 45  
 Thr Gly Gly Arg Lys Ile His Ser Gln Glu Gln Gly Arg Phe His Ile  
 50 55 60  
 Glu Asn Thr Asp Asp Leu Thr Thr Leu Ile Ile Met Asp Val Gln Lys  
 65 70 75 80  
 Gln Asp Gly Gly Leu Tyr Thr Leu Ser Leu Gly Asn Glu Phe Gly Ser  
 85 90 95  
 Asp Ser Ala Thr Val Asn Ile His Ile Arg Ser Ile  
 100 105

<210> 42  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> O.1 chain sequence

<400> 42  
 Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Lys Ala Phe Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Cys Gln Ile Val Gly Asn Pro Thr  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Thr Ile Leu  
 50 55 60  
 Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Cys Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 43  
 <211> 97  
 <212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> 0.2 chain sequence

<400> 43

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

<210> 44

<211> 97

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> 0.3 chain sequence

<400> 44

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

<210> 45

<211> 97

<212> PRT

<213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.4 chain sequence

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

<210> 46  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.5 chain sequence

<400> 46  
 Ser Gly Cys Pro Arg Phe Leu Thr Arg Pro Lys Ala Phe Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Thr Ile Leu  
 50 55 60  
 Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Ala Val Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 47  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.6 chain sequence

<400> 47  
 Ser Gly Ala Pro Arg Phe Leu Thr Cys Pro Lys Ala Phe Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Thr Ile Leu  
 50 55 60  
 Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Ala Val Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 48  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.7 chain sequence

<400> 48  
 Ser Gly Ala Pro Arg Phe Lys Thr Arg Pro Lys Ala Phe Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
 50 55 60  
 Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 49  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>

<221> DOMAIN  
 <223> 0.8 chain sequence

<400> 49  
 Ser Gly Ala Pro Arg Phe Lys Thr Arg Pro Lys Ala Phe Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu His Ile Leu  
 50 55 60  
 Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 50  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.9 chain sequence

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

<210> 51  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN

<223> 0.10 chain sequence

<400> 51

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

<210> 52

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> 0.11 chain sequence

<400> 52

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

<210> 53

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> 0.12 chain sequence

<400> 53  
 Asp Gln Pro Gln Phe Ser Gly Ala Pro Arg Phe Lys Thr Arg Pro Lys  
 1 5 10 15  
 Ala Phe Val Val Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile  
 20 25 30  
 Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro  
 35 40 45  
 Val Ala Ala Gly Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr  
 50 55 60  
 Arg Leu Lys Ile Leu Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val  
 65 70 75 80  
 Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu  
 85 90 95  
 Gln Val Asp Ala Glu Ala  
 100

<210> 54  
 <211> 102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.13 chain sequence

<400> 54  
 Asp Gln Pro Gln Phe Ser Gly Ala Pro Arg Phe Lys Thr Arg Pro Lys  
 1 5 10 15  
 Ala Phe Val Val Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile  
 20 25 30  
 Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro  
 35 40 45  
 Val Ala Ala Gly Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr  
 50 55 60  
 Arg Leu His Ile Leu Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val  
 65 70 75 80  
 Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu  
 85 90 95  
 Gln Val Asp Ala Glu Ala  
 100

<210> 55  
 <211> 102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.14 chain sequence

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

<210> 56  
 <211> 102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.15 chain sequence

<400> 56  
 Asp Gln Pro Gln Phe Ser Gly Ala Pro Arg Phe Arg Thr Arg Pro Lys  
 1 5 10 15  
 Ala Phe Val Val Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile  
 20 25 30  
 Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro  
 35 40 45  
 Val Ala Ala Gly Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr  
 50 55 60  
 Arg Leu His Ile Leu Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val  
 65 70 75 80  
 Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu  
 85 90 95  
 Gln Val Asp Ala Glu Ala  
 100

<210> 57  
 <211> 102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.4-L1 chain sequence

<400> 57  
 Gly Gly Gly Gly Ser Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Lys  
 1 5 10 15  
 Ala Phe Val Val Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile  
 20 25 30  
 Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro  
 35 40 45  
 Val Ala Ala Gly Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr  
 50 55 60  
 Arg Leu Thr Ile Leu Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val  
 65 70 75 80  
 Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu  
 85 90 95  
 Gln Val Asp Ala Glu Ala  
 100

<210> 58  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.4-L2 chain sequence

<400> 58  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Gly Ala Pro Arg Phe  
 1 5 10 15  
 Leu Thr Arg Pro Lys Ala Phe Val Val Ser Val Gly Lys Asp Ala Thr  
 20 25 30  
 Leu Ser Ser Gln Ile Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu  
 35 40 45  
 Lys Asp Gln Gln Pro Val Ala Gly Ala Arg Phe Arg Leu Ala Gln  
 50 55 60  
 Asp Gly Asp Leu Tyr Arg Leu Thr Ile Leu Asp Leu Ala Leu Gly Asp  
 65 70 75 80  
 Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe  
 85 90 95  
 Ala Cys Val Gly Leu Gln Val Asp Ala Glu Ala  
 100 105

<210> 59  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> OL.1 chain sequence

<400> 59

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

<210> 60  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> OL.2 chain sequence

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

<210> 61  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> OL.3 chain sequence

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Ser | Pro | Pro | Glu | Phe | Leu | Arg | Phe | Pro | Arg | Pro | Val | Arg | Val |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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

<210> 62  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> OL.4 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 62  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln   | Gly | Ser | Pro | Pro | Glu | Phe | Leu | Arg | Phe | Pro | Arg | Pro | Val | Arg | Val |
| 1     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val   | Ser | Gly | Ala | Glu | Ala | Glu | Leu | Lys | Ser | Val | Val | Leu | Gly | Glu | Pro |
|       |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro   | Pro | Val | Val | Val | Trp | Glu | Lys | Gly | Gly | Gln | Gln | Leu | Ala | Ala | Ser |
|       |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu   | Arg | Leu | Ser | Phe | Pro | Ala | Asp | Gly | Ala | Glu | His | Gly | Leu | Leu | Leu |
|       | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Thr   | Ala | Ala | Leu | Pro | Thr | Asp | Ala | Gly | Cys | Tyr | Val | Ser | Arg | Ala | Arg |
| 65    |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Asn   | Ala | Ala | Gly | Glu | Ala | Tyr | Ala | Ala | Ala | Ala | Val | Thr | Val | Leu | Glu |
|       |     |     |     | 85  |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Pro   | Pro |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 63  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> OL.5 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 63  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln   | Gly | Ser | Pro | Pro | Glu | Phe | Leu | Arg | Phe | Pro | Arg | Pro | Val | Arg | Val |
| 1     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Gly | Ala | Glu | Ala | Glu | Leu | Lys | Ser | Val | Val | Leu | Gly | Glu | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro | Pro | Val | Val | Val | Trp | Glu | Lys | Gly | Gly | Gln | Gln | Leu | Ala | Ala | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Arg | Leu | Ser | Phe | Pro | Ala | Asp | Gly | Ala | Glu | His | Gly | Leu | Leu | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Thr | Ala | Ala | Leu | Pro | Thr | Asp | Ala | Gly | Val | Tyr | Val | Ser | Arg | Ala | Arg |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Asn | Ala | Ala | Cys | Glu | Ala | Tyr | Ala | Ala | Ala | Ala | Val | Thr | Val | Leu | Glu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Pro | Pro |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 64  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> OL.6 chain sequence

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

<210> 65  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.7 chain sequence

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ser | Asp | Ile | Ser | Ile | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |
| Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Gln | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Ile | Ser | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Ser | Leu | Ser | Leu |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Gly | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |
| Ser | Ile |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |

<210> 66  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.8 chain sequence

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

<210> 67  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.9 chain sequence

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| Gly | Ile | Trp | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Leu | Ser | Ile | Asp |  |  |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |  |  |
| Glu | Gly | Lys | Val | Leu | Met | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Gln | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ile | Met | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Ser | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Gly | Met | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Ile |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 68  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.10 chain sequence

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 68 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly      | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp |
| 1        |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Glu      | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |
|          |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Pro      | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |
|          |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Gln      | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile |
|          | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ile      | Lys | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu |
| 65       |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg      | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |
|          |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser      | Ile |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 69  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.11 chain sequence

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 69 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly      | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ser | Asp | Ile | Ser | Ile | Asp |
| 1        |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Glu      | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |
|          |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Pro      | Glu | Val | Thr | Trp | Ser | Thr | Ser | Gly | Lys | Lys | Ile | Ser | Ser | Glu | Glu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |  |  |  |  |
| Gly | Gly | Arg | Phe | His | Ile | Glu | Ser | Thr | Glu | Asp | Leu | Thr | Thr | Leu | Ile |  |  |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |  |  |
| Ile | Met | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Val | Tyr | Thr | Leu | Ser | Leu |  |  |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |  |  |
| Gly | Asn | Asp | Leu | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |  |  |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |  |  |
| Ser | Ile |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |

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

<220>  
 <221> DOMAIN  
 <223> T.12 chain sequence

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

<210> 71  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.13 chain sequence

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| Gly | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ser | Asp | Ile | Ser | Ile | Asp |  |  |  |  |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |  |  |  |  |
| Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |  |  |  |  |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |     |  |  |  |  |
| Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |  |  |  |  |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |  |  |  |  |

Gln Gly Arg Phe His Ile Glu Ser Thr Glu Asp Leu Thr Thr Leu Ile  
     50                    55                    60  
 Ile Met Asp Val Gln Lys Gln Asp Gly Gly Val Tyr Thr Leu Ser Leu  
 65                    70                    75                    80  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
                     85                    90                    95  
 Ser Ile

<210> 72  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.14 chain sequence

<400> 72  
 Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ser Asp Ile Ser Ile Asp  
 1                    5                    10                    15  
 Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe Thr Gly Glu Pro Thr  
                     20                    25                    30  
 Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu  
                     35                    40                    45  
 Gln Gly Arg Phe His Ile Glu Ser Thr Glu Asp Leu Thr Thr Leu Ile  
     50                    55                    60  
 Ile Ser Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Ser Leu Ser Leu  
 65                    70                    75                    80  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
                     85                    90                    95  
 Ser Ile

<210> 73  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.10-L1 sequence

<400> 73  
 Gly Gly Gly Gly Ser Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ile  
 1                    5                    10                    15  
 Asp Ile Ser Ile Asp Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe  
                     20                    25                    30  
 Thr Gly Glu Pro Thr Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys  
                     35                    40                    45

Ile His Ser Gln Glu Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp  
 50 55 60  
 Leu Thr Thr Leu Ile Ile Lys Asp Val Gln Lys Gln Asp Gly Gly Leu  
 65 70 75 80  
 Tyr Thr Leu Thr Leu Arg Asn Glu Phe Gly Ser Asp Ser Ala Thr Val  
 85 90 95  
 Asn Ile His Ile Arg Ser Ile  
 100

<210> 74  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.15 chain sequence

<400> 74  
 Lys Ala Gly Ile Arg Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ser  
 1 5 10 15  
 Asp Ile Ser Ile Asp Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe  
 20 25 30  
 Thr Gly Glu Pro Thr Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys  
 35 40 45  
 Ile His Ser Gln Glu Gln Gly Arg Phe His Ile Glu Ser Thr Glu Asp  
 50 55 60  
 Leu Thr Thr Leu Ile Ile Ser Asp Val Gln Lys Gln Asp Gly Gly Leu  
 65 70 75 80  
 Tyr Ser Leu Ser Leu Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val  
 85 90 95  
 Asn Ile His Ile Arg Ser Ile  
 100

<210> 75  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.15-L1 chain sequence

<400> 75  
 Gly Gly Gly Gly Ser Lys Ala Gly Ile Arg Gly Ile Pro Pro Lys Ile  
 1 5 10 15  
 Glu Cys Leu Pro Ser Asp Ile Ser Ile Asp Glu Gly Lys Val Leu Thr  
 20 25 30  
 Val Ala Ser Ala Phe Thr Gly Glu Pro Thr Pro Glu Val Thr Trp Ser  
 35 40 45  
 Thr Gly Gly Arg Lys Ile His Ser Gln Glu Gln Gly Arg Phe His Ile

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 50  |     | 55  |     | 60  |     |     |     |     |     |     |     |     |     |     |     |
| Glu | Ser | Thr | Glu | Asp | Leu | Thr | Thr | Leu | Ile | Ile | Ser | Asp | Val | Gln | Lys |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Gln | Asp | Gly | Gly | Leu | Tyr | Ser | Leu | Ser | Leu | Gly | Asn | Glu | Phe | Gly | Ser |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg | Ser | Ile |     |     |     |     |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     |     |     |

<210> 76  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.14-L1 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 76  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly   | Gly | Gly | Gly | Ser | Gly | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ser |
| 1     | 5   | 10  | 15  |     |     |     |     |     |     |     |     |     |     |     |     |
| Asp   | Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe |
|       | 20  | 25  | 30  |     |     |     |     |     |     |     |     |     |     |     |     |
| Thr   | Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys |
|       | 35  | 40  | 45  |     |     |     |     |     |     |     |     |     |     |     |     |
| Ile   | His | Ser | Gln | Glu | Gln | Gly | Arg | Phe | His | Ile | Glu | Ser | Thr | Glu | Asp |
|       | 50  | 55  | 60  |     |     |     |     |     |     |     |     |     |     |     |     |
| Leu   | Thr | Thr | Leu | Ile | Ile | Ser | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu |
| 65    |     | 70  |     |     |     |     |     |     | 75  |     |     |     |     |     | 80  |
| Tyr   | Ser | Leu | Ser | Leu | Gly | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val |
|       |     | 85  |     |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Asn   | Ile | His | Ile | Arg | Ser | Ile |     |     |     |     |     |     |     |     |     |
|       |     |     | 100 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 77  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> O.17 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 77  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser   | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Arg | Pro | Lys | Ser | Tyr | Thr | Val | Ser |
| 1     | 5   | 10  | 15  |     |     |     |     |     |     |     |     |     |     |     |     |
| Val   | Gly | Lys | Asp | Ala | Ser | Leu | Ser | Ser | Gln | Ile | Val | Gly | Asn | Pro | Thr |
|       | 20  | 25  | 30  |     |     |     |     |     |     |     |     |     |     |     |     |
| Pro   | Gln | Val | Ser | Trp | Glu | Lys | Asp | Gln | Gln | Pro | Val | Ala | Ala | Gly | Ala |
|       | 35  | 40  | 45  |     |     |     |     |     |     |     |     |     |     |     |     |
| Arg   | Phe | Arg | Leu | Ala | Gln | Asp | Gly | Asp | Leu | Tyr | Arg | Leu | Lys | Ile | Leu |
|       | 50  | 55  | 60  |     |     |     |     |     |     |     |     |     |     |     |     |

Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
65 70 75 80  
Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Gln Val Asp Ala Glu  
85 90 95  
Ala

<210> 78  
<211> 97  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.18 chain sequence

<400> 78  
Ser Glu Ala Pro Arg Phe Leu Thr Arg Pro Leu Ala Phe Val Val Ser  
1 5 10 15  
Glu Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asp Pro Pro  
20 25 30  
Pro Glu Val Thr Trp Glu Lys Asp Gln Gln Pro Ile Thr Ala Gly Ala  
35 40 45  
Arg Phe Arg Leu Ala Gln Asp Gly Asp Val Tyr Arg Leu Glu Ile Leu  
50 55 60  
Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
65 70 75 80  
Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Gln Val Asp Ala Glu  
85 90 95  
Gly

<210> 79  
<211> 97  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.19 chain sequence

<400> 79  
Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu Ala Phe Val Val Ser  
1 5 10 15  
Val Gly Lys Leu Ala Met Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
20 25 30  
Pro Gln Val Ser Trp Glu Lys Asp Gln Gln Pro Val Ala Ala Gly Ala  
35 40 45  
Arg Phe Arg Leu Leu Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
50 55 60  
Asp Leu Ala Leu Gly Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Ala | Ile | Gly | Glu | Ala | Phe | Ala | Cys | Val | Gly | Leu | Gln | Val | Asp | Ala |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  | Glu |

Ala

<210> 80  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.20 chain sequence

<400> 80

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

Ala

<210> 81  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.21 chain sequence

<400> 81

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Arg | Pro | Leu | Ala | Phe | Val | Val | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Val | Gly | Lys | Asp | Ala | Thr | Leu | Ser | Ser | Gln | Ile | Val | Gly | Asn | Pro | Thr |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Pro | Gln | Val | Ser | Trp | Glu | Lys | Asp | Gln | Leu | Pro | Val | Thr | Ala | Gly | Ala |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Arg | Phe | Arg | Leu | Ala | Gln | Asp | Gly | Asp | Leu | Tyr | Arg | Leu | Lys | Ile | Leu |
|     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |
| Asp | Leu | Thr | Leu | Ser | Asp | Ser | Gly | Gln | Tyr | Val | Ser | Arg | Ala | Arg | Asn |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |

Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Glu Val Gly Ala Glu  
85 90 95  
Ala

<210> 82  
<211> 97  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.22 chain sequence

<400> 82  
Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu Ser Tyr Val Val Ser  
1 5 10 15  
Val Gly Lys Asp Ala Ser Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
20 25 30  
Pro Gln Val Ser Trp Glu Lys Asp Gln Leu Pro Val Thr Ala Gly Ala  
35 40 45  
Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
50 55 60  
Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
65 70 75 80  
Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Glu Val Gly Ala Glu  
85 90 95  
Ala

<210> 83  
<211> 102  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.20-L1 chain sequence

<400> 83  
Gly Gly Gly Gly Ser Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu  
1 5 10 15  
Ala Phe Val Val Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile  
20 25 30  
Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro  
35 40 45  
Val Thr Ala Gly Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr  
50 55 60  
Arg Leu Lys Ile Leu Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val  
65 70 75 80  
Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe Ala Cys Leu Gly Leu



Glu Val Gly Ala Glu Ala  
100

<210> 86  
<211> 107  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.23-L1 sequence

<400> 86  
Gly Gly Gly Gly Ser Asp Gln Pro Gln Phe Ser Gly Ala Pro Arg Phe  
1 5 10 15  
Leu Thr Arg Pro Leu Ser Tyr Val Val Ser Val Gly Lys Asp Ala Ser  
20 25 30  
Leu Ser Ser Gln Ile Val Gly Asn Pro Thr Pro Gln Val Ser Trp Glu  
35 40 45  
Lys Asp Gln Leu Pro Val Thr Ala Gly Ala Arg Phe Arg Leu Ala Gln  
50 55 60  
Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu Asp Leu Gln Leu Ser Asp  
65 70 75 80  
Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn Ala Ile Gly Glu Ala Phe  
85 90 95  
Ala Cys Val Gly Leu Glu Val Gly Ala Glu Ala  
100 105

<210> 87  
<211> 452  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> CHAIN  
<223> Sequence of DI-1 chain 1 (DI-1-H1)

<400> 87  
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
20 25 30  
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ser Gly Ile Thr Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80  
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95  
Ala Lys Asp Pro Gly Thr Thr Val Ile Met Ser Trp Phe Asp Pro Trp

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     | 100 |     |     |     | 105 |     |     |     | 110 |     |     |     |     |
| Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ser | Val | Phe | Pro | Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ala | Ala | Leu | Gly | Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Val | Ser | Trp | Asn | Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ala | Val | Leu | Gln | Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Pro | Ser | Ser | Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| His | Lys | Pro | Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Cys | Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Met | Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| His | Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Val | His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Tyr | Arg | Val | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro |
|     |     |     |     | 325 |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Val | Tyr | Thr | Leu | Pro | Pro | Cys | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ser | Leu | Trp | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     |     | 415 |     |
| Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     |     | 445 |     |     |
| Ser | Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 450 |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 88  
 <211> 215  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN

<223> Sequence of DI-1 chain 2 (DI-1-L1)

<400> 88

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

<210> 89

<211> 451

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of DI-1 chain 3 (DI-1-H2)

<400> 89

```
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 Gly Phe Ser Leu Ile Gly Tyr
      20      25      30
Asp Leu Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
      35      40      45
Gly Ile Ile Trp Gly Asp Gly Thr Thr Asp Tyr Asn Ser Ala Val Lys
      50      55      60
Ser Arg Val Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Phe Ser Leu
```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Lys | Leu | Ser | Ser | Val | Thr | Ala | Ala | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |
| Arg | Gly | Gly | Tyr | Trp | Tyr | Ala | Thr | Ser | Tyr | Tyr | Phe | Asp | Tyr | Trp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |
| Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |
| Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp | Glu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |
| Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu | Gln |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |
| Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile | Ile |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 | Lys |
| Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu | Arg |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     | Asn |
| Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg | Ser |
| 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     | Ile |
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |
| Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |
| Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 | His |
| Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     | Val |
| His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     | Tyr |
| Arg | Val | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |
| Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | Ile |
| Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 | Val |
| Cys | Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     | Ser |
| Leu | Ser | Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val |
| 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     | Glu |
| Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |
| Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |
| Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 | Met |
| His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     | Ser |
| Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |     |     |
|     | 450 |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 90  
 <211> 209  
 <212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of DI-1 chain 4 (DI-1-L2)

<400> 90

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

<210> 91

<211> 453

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of BU1 chain 1 (BU1-H1)

<400> 91

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
1 5 10 15  
Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Asn Asn Asn  
20 25 30  
Ala Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met

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<210> 92  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU1 chain 2 (BU1-L1)

<400> 92  
 Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
 1 5 10 15  
 Thr Val Arg Val Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala  
 20 25 30  
 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser  
 50 55 60  
 Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Arg Asp Ser Ser Gly Asn His  
 85 90 95  
 Trp Val Phe Gly Gly Gly Thr Glu Leu Thr Val Leu Gly Gln Pro Lys  
 100 105 110  
 Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln  
 115 120 125  
 Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly  
 130 135 140  
 Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly  
 145 150 155 160  
 Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala  
 165 170 175  
 Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser  
 180 185 190  
 Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val  
 195 200 205  
 Ala Pro Thr Glu Cys Ser  
 210

<210> 93  
 <211> 449  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU1 chain 3 (BU1-H2)

<400> 93  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |  |  |
| Ser | Leu | Lys | Ile | Ser | Cys | Lys | Gly | Ser | Gly | Tyr | Ser | Phe | Thr | Thr | Tyr |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |
| Trp | Leu | Gly | Trp | Val | Arg | Gln | Met | Pro | Gly | Lys | Gly | Leu | Asp | Trp | Ile |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Gly | Ile | Met | Ser | Pro | Val | Asp | Ser | Asp | Ile | Arg | Tyr | Ser | Pro | Ser | Phe |  |  |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Gln | Gly | Gln | Val | Thr | Met | Ser | Val | Asp | Lys | Ser | Ile | Thr | Thr | Ala | Tyr |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Leu | Gln | Trp | Asn | Ser | Leu | Lys | Ala | Ser | Asp | Thr | Ala | Met | Tyr | Tyr | Cys |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |  |  |
| Ala | Arg | Arg | Arg | Pro | Gly | Gln | Gly | Tyr | Phe | Asp | Phe | Trp | Gly | Gln | Gly |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Ile | Pro | Pro |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |
| Lys | Ile | Glu | Cys | Leu | Pro | Ser | Asp | Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val |  |  |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu | Gln | Gly | Arg | Phe |  |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |  |
| His | Ile | Glu | Ser | Thr | Glu | Asp | Leu | Thr | Thr | Leu | Ile | Ile | Ser | Asp | Val |  |  |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Ser | Leu | Ser | Leu | Gly | Asn | Glu | Phe |  |  |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |  |  |
| Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg | Ser | Ile | Asp | Lys |  |  |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp |  |  |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |
| Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn |  |  |
|     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |  |  |
| Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val |  |  |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |
| Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr |  |  |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu |  |  |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly  
 435 440 445  
 Lys

<210> 94  
 <211> 209  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU1 chain 4 (BU1-L2)

<400> 94  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp  
 20 25 30  
 Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Lys Ser Leu Ile  
 35 40 45  
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ile Tyr Pro Tyr  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser  
 100 105 110  
 Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu Ser Tyr Val Val Ser  
 115 120 125  
 Val Gly Lys Asp Ala Ser Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
 130 135 140  
 Pro Gln Val Ser Trp Glu Lys Asp Gln Leu Pro Val Thr Ala Gly Ala  
 145 150 155 160  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
 165 170 175  
 Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 180 185 190  
 Ala Ile Gly Glu Ala Phe Ala Cys Val Gly Leu Glu Val Gly Ala Glu  
 195 200 205  
 Ala

<210> 95  
 <211> 449  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU2 chain 1 (BU2-H1)/BU4 chain 1 (BU4-H1)/BU5 chain 3

(BU5-H2)

<400> 95  
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu  
1 5 10 15  
Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Thr Tyr  
20 25 30  
Trp Leu Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Asp Trp Ile  
35 40 45  
Gly Ile Met Ser Pro Val Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe  
50 55 60  
Gln Gly Gln Val Thr Met Ser Val Asp Lys Ser Ile Thr Thr Ala Tyr  
65 70 75 80  
Leu Gln Trp Asn Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys  
85 90 95  
Ala Arg Arg Arg Pro Gly Gln Gly Tyr Phe Asp Phe Trp Gly Gln Gly  
100 105 110  
Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe  
115 120 125  
Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu  
130 135 140  
Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp  
145 150 155 160  
Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu  
165 170 175  
Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser  
180 185 190  
Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro  
195 200 205  
Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys  
210 215 220  
Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro  
225 230 235 240  
Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser  
245 250 255  
Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
260 265 270  
Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
275 280 285  
Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val  
290 295 300  
Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
305 310 315 320  
Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
325 330 335  
Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
340 345 350  
Leu Pro Pro Cys Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp  
355 360 365  
Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu  
370 375 380  
Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |
|     |     |     | 420 |     |     | 425 |     |     |     |     |     |     | 430 |     |     |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |
|     |     | 435 |     |     |     | 440 |     |     |     |     |     | 445 |     |     |     |
| Lys |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 96  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU2 chain 2 (BU2-L1)/BU3 chain 4 (BU3-L2)/BU4 chain 2 (BU4-L1)/BU5 chain 4 (BU5-L2)

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 96  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asp   | Ile | Gln | Met | Thr | Gln | Ser | Pro | Ser | Ser | Leu | Ser | Ala | Ser | Val | Gly |
| 1     |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Asp   | Arg | Val | Thr | Ile | Thr | Cys | Arg | Ala | Ser | Gln | Gly | Ile | Ser | Ser | Trp |
|       |     |     | 20  |     |     | 25  |     |     |     |     |     | 30  |     |     |     |
| Leu   | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Glu | Lys | Ala | Pro | Lys | Ser | Leu | Ile |
|       |     |     | 35  |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Tyr   | Ala | Ala | Ser | Ser | Leu | Gln | Ser | Gly | Val | Pro | Ser | Arg | Phe | Ser | Gly |
|       |     |     | 50  |     |     | 55  |     |     |     |     |     | 60  |     |     |     |
| Ser   | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr | Ile | Ser | Ser | Leu | Gln | Pro |
| 65    |     |     | 70  |     |     | 75  |     |     |     |     |     |     |     | 80  |     |
| Glu   | Asp | Phe | Ala | Thr | Tyr | Tyr | Cys | Gln | Gln | Tyr | Asn | Ile | Tyr | Pro | Tyr |
|       |     |     | 85  |     |     | 90  |     |     |     |     |     |     |     | 95  |     |
| Thr   | Phe | Gly | Gln | Gly | Thr | Lys | Leu | Glu | Ile | Lys | Arg | Thr | Val | Ala | Ala |
|       |     |     | 100 |     |     | 105 |     |     |     |     |     |     | 110 |     |     |
| Pro   | Ser | Val | Phe | Ile | Phe | Pro | Pro | Ser | Asp | Glu | Gln | Leu | Lys | Ser | Gly |
|       |     |     | 115 |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Thr   | Ala | Ser | Val | Val | Cys | Leu | Leu | Asn | Asn | Phe | Tyr | Pro | Arg | Glu | Ala |
|       |     |     | 130 |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Lys   | Val | Gln | Trp | Lys | Val | Asp | Asn | Ala | Leu | Gln | Ser | Gly | Asn | Ser | Gln |
| 145   |     |     | 150 |     |     | 155 |     |     |     |     |     |     |     | 160 |     |
| Glu   | Ser | Val | Thr | Glu | Gln | Asp | Ser | Lys | Asp | Ser | Thr | Tyr | Ser | Leu | Ser |
|       |     |     | 165 |     |     | 170 |     |     |     |     |     |     |     | 175 |     |
| Ser   | Thr | Leu | Thr | Leu | Ser | Lys | Ala | Asp | Tyr | Glu | Lys | His | Lys | Val | Tyr |
|       |     |     | 180 |     |     | 185 |     |     |     |     |     |     | 190 |     |     |
| Ala   | Cys | Glu | Val | Thr | His | Gln | Gly | Leu | Ser | Ser | Pro | Val | Thr | Lys | Ser |
|       |     |     | 195 |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Phe   | Asn | Arg | Gly | Glu | Cys |     |     |     |     |     |     |     |     |     |     |
|       |     |     | 210 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 97  
 <211> 453

<212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU2 chain 3 (BU2-H2)

<400> 97  
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Asn Asn Asn  
 20 25 30  
 Ala Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Gly Ile Ile Pro Met Phe Gly Thr Ala Lys Tyr Ser Gln Asn Phe  
 50 55 60  
 Gln Gly Arg Val Ala Ile Thr Ala Asp Glu Ser Thr Gly Thr Ala Ser  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Ser Arg Asp Leu Leu Leu Phe Pro His His Ala Leu Ser Pro  
 100 105 110  
 Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ser Asp Ile Ser Ile Asp  
 130 135 140  
 Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe Thr Gly Glu Pro Thr  
 145 150 155 160  
 Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu  
 165 170 175  
 Gln Gly Arg Phe His Ile Glu Ser Thr Glu Asp Leu Thr Thr Leu Ile  
 180 185 190  
 Ile Ser Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Ser Leu Ser Leu  
 195 200 205  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
 210 215 220  
 Ser Ile Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala  
 225 230 235 240  
 Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr  
 245 250 255  
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val  
 260 265 270  
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val  
 275 280 285  
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser  
 290 295 300  
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu  
 305 310 315 320  
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala  
 325 330 335  
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro  
 340 345 350

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Cys | Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Val | Ser | Leu | Ser | Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Leu | Ser | Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |     |
|     | 450 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 98

<211> 215

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of BU2 chain 4 (BU2-L2)

<400> 98

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

210

215

<210> 99  
 <211> 453  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU3 chain 1 (BU3-H1)

<400> 99  
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Asn Asn Asn  
 20 25 30  
 Ala Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Gly Ile Ile Pro Met Phe Gly Thr Ala Lys Tyr Ser Gln Asn Phe  
 50 55 60  
 Gln Gly Arg Val Ala Ile Thr Ala Asp Glu Ser Thr Gly Thr Ala Ser  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Ser Arg Asp Leu Leu Leu Phe Pro His His Ala Leu Ser Pro  
 100 105 110  
 Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ser Asp Ile Ser Ile Asp  
 130 135 140  
 Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe Thr Gly Glu Pro Thr  
 145 150 155 160  
 Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu  
 165 170 175  
 Gln Gly Arg Phe His Ile Glu Ser Thr Glu Asp Leu Thr Thr Leu Ile  
 180 185 190  
 Ile Ser Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr Ser Leu Ser Leu  
 195 200 205  
 Gly Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg  
 210 215 220  
 Ser Ile Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala  
 225 230 235 240  
 Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr  
 245 250 255  
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val  
 260 265 270  
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val  
 275 280 285  
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser  
 290 295 300  
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu  
 305 310 315 320

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Gln | Val | Tyr | Thr | Leu | Pro | Pro | Cys | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Val | Ser | Leu | Trp | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |
| Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser |  |  |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |  |  |
| Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser |  |  |
|     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |  |  |
| Leu | Ser | Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |     |  |  |
|     | 450 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |

<210> 100

<211> 215

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of BU3 chain 2 (BU3-L1)/BU4 chain 4 (BU4-L2)

<400> 100

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



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val |
| 290 |     |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     |     | 320 |
| Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu |
| 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |

Lys

<210> 102  
 <211> 458  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of BU4 chain 3 (BU4-H2)

<400> 102

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Gln | Leu | Gln | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ser |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Val | Arg | Val | Ser | Cys | Lys | Ala | Ser | Gly | Gly | Thr | Phe | Asn | Asn | Asn |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Ala | Ile | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Gly | Gly | Ile | Ile | Pro | Met | Phe | Gly | Thr | Ala | Lys | Tyr | Ser | Gln | Asn | Phe |
|     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |     |
| Gln | Gly | Arg | Val | Ala | Ile | Thr | Ala | Asp | Glu | Ser | Thr | Gly | Thr | Ala | Ser |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ala | Arg | Ser | Arg | Asp | Leu | Leu | Leu | Phe | Pro | His | His | Ala | Leu | Ser | Pro |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Trp | Gly | Arg | Gly | Thr | Met | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Lys | Ala | Gly | Ile | Arg | Gly | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ser |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asp | Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |         |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160     |
| Thr | Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg Lys |
|     |     |     |     |     | 165 |     |     |     | 170 |     |     |     |     | 175     |
| Ile | His | Ser | Gln | Glu | Gln | Gly | Arg | Phe | His | Ile | Glu | Ser | Thr | Glu Asp |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |         |
| Leu | Thr | Thr | Leu | Ile | Ile | Ser | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly Leu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |         |
| Tyr | Ser | Leu | Ser | Leu | Gly | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr Val |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |         |
| Asn | Ile | His | Ile | Arg | Ser | Ile | Asp | Lys | Thr | His | Thr | Cys | Pro | Pro Cys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240     |
| Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro Pro |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255     |
| Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr Cys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |         |
| Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn Trp |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |         |
| Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys | Thr | Lys | Pro | Arg Glu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |         |
| Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser | Val | Leu | Thr | Val Leu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320     |
| His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser Asn |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335     |
| Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys Gly |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |         |
| Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr | Leu | Pro | Pro | Ser | Arg | Glu Glu |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |         |
| Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser | Cys | Ala | Val | Lys | Gly | Phe Tyr |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |         |
| Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu Asn |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400     |
| Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe Phe |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415     |
| Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly Asn |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |         |
| Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr Thr |
|     | 435 |     |     |     |     | 440 |     |     |     |     |     | 445 |     |         |
| Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |     |     |     |     |         |
|     | 450 |     |     |     |     | 455 |     |     |     |     |     |     |     |         |

<210> 103  
 <211> 453  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> CHAIN  
 <223> Sequence of BU5 chain 1 (BU5-H1)

<400> 103  
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Ser | Val | Arg | Val | Ser | Cys | Lys | Ala | Ser | Gly | Gly | Thr | Phe | Asn | Asn | Asn |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |
| Ala | Ile | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Gly | Gly | Ile | Ile | Pro | Met | Phe | Gly | Thr | Ala | Lys | Tyr | Ser | Gln | Asn | Phe |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Gln | Gly | Arg | Val | Ala | Ile | Thr | Ala | Asp | Glu | Ser | Thr | Gly | Thr | Ala | Ser |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |  |  |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |  |  |
| Ala | Arg | Ser | Arg | Asp | Leu | Leu | Leu | Phe | Pro | His | His | Ala | Leu | Ser | Pro |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Trp | Gly | Arg | Gly | Thr | Met | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |
| Gly | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |  |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |  |
| Gln | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Ile | Lys | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu |  |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Arg | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Ser | Ile | Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Ala | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr |  |  |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |  |  |
| Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val |  |  |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |  |
| Ser | His | Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Glu | Val | His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |
| Thr | Tyr | Arg | Val | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala |  |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |  |
| Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Gln | Val | Cys | Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Val | Ser | Leu | Ser | Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala |  |  |
|     |     |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |     |  |  |
| Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Tyr | Lys | Thr | Thr |     |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |     |  |  |
| Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu |  |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |  |  |
| Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser |  |  |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |  |  |
| Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser |  |  |

435                                      440                                      445  
 Leu Ser Pro Gly Lys  
 450

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

<220>  
 <221> CHAIN  
 <223> Sequence of BU5 chain 2 (BU5-L1)

<400> 104  
 Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
 1                                      5                                      10                                      15  
 Thr Val Arg Val Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala  
                                     20                                      25                                      30  
 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
                                     35                                      40                                      45  
 Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser  
                                     50                                      55                                      60  
 Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
 65                                      70                                      75                                      80  
 Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Arg Asp Ser Ser Gly Asn His  
                                     85                                      90                                      95  
 Trp Val Phe Gly Gly Gly Thr Glu Leu Thr Val Leu Gly Gly Gly Gly  
                                     100                                      105                                      110  
 Ser Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu Ala Phe Val Val  
                                     115                                      120                                      125  
 Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro  
                                     130                                      135                                      140  
 Thr Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr Ala Gly  
 145                                      150                                      155                                      160  
 Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile  
                                     165                                      170                                      175  
 Leu Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg  
                                     180                                      185                                      190  
 Asn Ala Ile Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Val Asp Ala  
                                     195                                      200                                      205  
 Glu Ala  
 210

<210> 105  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VH sequence of A0 antibody

<400> 105  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 20 25 30  
 Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60  
 Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80  
 Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95  
 Tyr Cys Val Arg His Gly Asn Phe Gly Asn Glu Tyr Ile Ser Tyr Trp  
 100 105 110  
 Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120 125

<210> 106  
 <211> 109  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> VL sequence of A0 antibody

<400> 106  
 Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
 1 5 10 15  
 Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
 20 25 30  
 Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
 35 40 45  
 Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
 50 55 60  
 Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
 65 70 75 80  
 Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn  
 85 90 95  
 Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 100 105

<210> 107  
 <211> 449  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of FA-1 chain 1 (FA-1-H1)

<400> 107

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Gln | Leu | Val | Gln | Ser | Gly | Gly | Gly | Val | Val | Gln | Pro | Gly | Thr |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ser | Leu | Arg | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Ile | Phe | Ser | Ser | Ser |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Ala | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Ala | Val | Ile | Ser | Tyr | Asp | Gly | Ser | Asn | Lys | Tyr | Tyr | Val | Asp | Ser | Val |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Lys | Gly | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asn | Ser | Lys | Asn | Thr | Leu | Tyr |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |
| Leu | Gln | Met | Asn | Ser | Leu | Arg | Ala | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ala | Arg | Ser | Ala | Arg | Leu | Tyr | Ala | Ser | Phe | Asp | Tyr | Trp | Gly | Gln | Gly |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Ala | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Ser | Gly | Ile | Pro | Pro |     |
|     | 115 |     |     |     |     |     | 120 |     |     |     | 125 |     |     |     |     |
| Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu | Gln | Gly | Arg | Phe |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| His | Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile | Ile | Lys | Asp | Val |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu | Arg | Asn | Glu | Phe |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg | Ser | Ile | Asp | Lys |
|     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu |
|     | 370 |     |     |     |     | 375 |     |     |     | 380 |     |     |     |     |     |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |

Asp Ser Asp Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys  
                     405                    410                    415  
 Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu  
                     420                    425                    430  
 Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly  
                     435                    440                    445  
 Lys

<210> 108  
 <211> 212  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of FA-1 chain 2 (FA-1-L1)

<400> 108  
 Asp Thr Val Val Thr Gln Glu Pro Ser Phe Ser Val Ser Pro Gly Gly  
 1                    5                    10                    15  
 Thr Val Thr Leu Thr Cys Gly Leu Ser Ser Gly Ser Val Ser Thr Ser  
                     20                    25                    30  
 His Tyr Pro Ser Trp Tyr Gln Gln Thr Pro Gly Gln Ala Pro Arg Met  
                     35                    40                    45  
 Leu Ile Tyr Asn Thr Asn Thr Arg Ser Ser Gly Val Pro Asp Arg Phe  
                     50                    55                    60  
 Ser Gly Ser Ile Leu Gly Asn Lys Ala Ala Leu Thr Ile Thr Gly Ala  
 65                    70                    75                    80  
 Gln Ala Asp Asp Glu Ser Asp Tyr Tyr Cys Ala Ile His Val Asp Arg  
                     85                    90                    95  
 Asp Ile Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly  
                     100                    105                    110  
 Gly Gly Ser Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu Ala Phe  
                     115                    120                    125  
 Val Val Ser Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly  
                     130                    135                    140  
 Asn Pro Thr Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr  
 145                    150                    155                    160  
 Ala Gly Ala Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu  
                     165                    170                    175  
 Lys Ile Leu Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg  
                     180                    185                    190  
 Ala Arg Asn Ala Ile Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Val  
                     195                    200                    205  
 Asp Ala Glu Ala  
                     210

<210> 109  
 <211> 455  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of FA-1 chain 3 (FA-1-H2)

<400> 109  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 20 25 30  
 Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60  
 Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80  
 Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95  
 Tyr Cys Val Arg His Gly Asn Phe Gly Asn Glu Tyr Ile Ser Tyr Trp  
 100 105 110  
 Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr  
 115 120 125  
 Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser  
 130 135 140  
 Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu  
 145 150 155 160  
 Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His  
 165 170 175  
 Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser  
 180 185 190  
 Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys  
 195 200 205  
 Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu  
 210 215 220  
 Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
 225 230 235 240  
 Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
 245 250 255  
 Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
 260 265 270  
 Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
 275 280 285  
 Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr  
 290 295 300  
 Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp  
 305 310 315 320  
 Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 325 330 335  
 Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 340 345 350  
 Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Glu Glu Met Thr Lys  
 355 360 365

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gln | Val | Ser | Leu | Trp | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp |
| 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Leu | Ser | Leu | Ser | Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |
| 450 |     |     |     |     |     | 455 |     |     |     |     |     |     |     |     |     |

<210> 110

<211> 216

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of FA-1 chain 4 (FA-1-L2)

<400> 110

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

<210> 111  
 <211> 447  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Sequence of hB7H3 antigen protein

<400> 111  
 Leu Glu Val Gln Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr  
 1 5 10 15  
 Asp Ala Thr Leu Cys Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu  
 20 25 30  
 Ala Gln Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val  
 35 40 45  
 His Ser Phe Ala Glu Gly Gln Asp Gln Gly Ser Ala Tyr Ala Asn Arg  
 50 55 60  
 Thr Ala Leu Phe Pro Asp Leu Leu Ala Gln Gly Asn Ala Ser Leu Arg  
 65 70 75 80  
 Leu Gln Arg Val Arg Val Ala Asp Glu Gly Ser Phe Thr Cys Phe Val  
 85 90 95  
 Ser Ile Arg Asp Phe Gly Ser Ala Ala Val Ser Leu Gln Val Ala Ala  
 100 105 110  
 Pro Tyr Ser Lys Pro Ser Met Thr Leu Glu Pro Asn Lys Asp Leu Arg  
 115 120 125  
 Pro Gly Asp Thr Val Thr Ile Thr Cys Ser Ser Tyr Gln Gly Tyr Pro  
 130 135 140  
 Glu Ala Glu Val Phe Trp Gln Asp Gly Gln Gly Val Pro Leu Thr Gly  
 145 150 155 160  
 Asn Val Thr Thr Ser Gln Met Ala Asn Glu Gln Gly Leu Phe Asp Val  
 165 170 175  
 His Ser Ile Leu Arg Val Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys  
 180 185 190  
 Leu Val Arg Asn Pro Val Leu Gln Gln Asp Ala His Ser Ser Val Thr  
 195 200 205  
 Ile Thr Pro Gln Arg Ser Pro Thr Gly Ala Val Glu Val Gln Val Pro  
 210 215 220  
 Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala Thr Leu Arg Cys  
 225 230 235 240  
 Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Ala Gln Leu Asn Leu Ile  
 245 250 255  
 Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser Phe Thr Glu Gly  
 260 265 270  
 Arg Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala Leu Phe Pro Asp  
 275 280 285  
 Leu Leu Ala Gln Gly Asn Ala Ser Leu Arg Leu Gln Arg Val Arg Val  
 290 295 300  
 Ala Asp Glu Gly Ser Phe Thr Cys Phe Val Ser Ile Arg Asp Phe Gly  
 305 310 315 320  
 Ser Ala Ala Val Ser Leu Gln Val Ala Ala Pro Tyr Ser Lys Pro Ser  
 325 330 335

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Leu | Glu | Pro | Asn | Lys | Asp | Leu | Arg | Pro | Gly | Asp | Thr | Val | Thr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ile | Thr | Cys | Ser | Ser | Tyr | Arg | Gly | Tyr | Pro | Glu | Ala | Glu | Val | Phe | Trp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Gln | Asp | Gly | Gln | Gly | Val | Pro | Leu | Thr | Gly | Asn | Val | Thr | Thr | Ser | Gln |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Met | Ala | Asn | Glu | Gln | Gly | Leu | Phe | Asp | Val | His | Ser | Val | Leu | Arg | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Val | Leu | Gly | Ala | Asn | Gly | Thr | Tyr | Ser | Cys | Leu | Val | Arg | Asn | Pro | Val |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Leu | Gln | Gln | Asp | Ala | His | Gly | Ser | Val | Thr | Ile | Thr | Gly | Gln | Pro | Met |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Thr | Asp | Tyr | Lys | Asp | Asp | Asp | Asp | Lys | His | His | His | His | His | His |     |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |

<210> 112  
 <211> 126  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Sequence of delta subunit of hCD3 antigen

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 112 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Phe   | Lys | Ile | Pro | Ile | Glu | Glu | Leu | Glu | Asp | Arg | Val | Phe | Val | Asn | Cys |
| 1     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asn   | Thr | Ser | Ile | Thr | Trp | Val | Glu | Gly | Thr | Val | Gly | Thr | Leu | Leu | Ser |
|       |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp   | Ile | Thr | Arg | Leu | Asp | Leu | Gly | Lys | Arg | Ile | Leu | Asp | Pro | Arg | Gly |
|       |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ile   | Tyr | Arg | Cys | Asn | Gly | Thr | Asp | Ile | Tyr | Lys | Asp | Lys | Glu | Ser | Thr |
|       | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Val   | Gln | Val | His | Tyr | Arg | Met | Cys | Gln | Ser | Cys | Val | Glu | Leu | Asp | Pro |
| 65    |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |
| Ala   | Thr | Val | Ala | Ser | Ala | Glu | Asn | Ala | Gln | Cys | Glu | Lys | Glu | Leu | Gln |
|       |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala   | Leu | Glu | Lys | Glu | Asn | Ala | Gln | Leu | Glu | Trp | Glu | Leu | Gln | Ala | Leu |
|       |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu   | Lys | Glu | Leu | Ala | Gln | Asp | Tyr | Lys | Asp | Asp | Asp | Asp | Lys |     |     |
|       |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

<210> 113  
 <211> 143  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Sequence of epsilon subunit of hCD3 antigen

```

<400> 113
Asp Gly Asn Glu Glu Met Gly Gly Ile Thr Gln Thr Pro Tyr Lys Val
1      5      10      15
Ser Ile Ser Gly Thr Thr Val Ile Leu Thr Cys Pro Gln Tyr Pro Gly
20     25     30
Ser Glu Ile Leu Trp Gln His Asn Asp Lys Asn Ile Gly Gly Asp Glu
35     40     45
Asp Asp Lys Asn Ile Gly Ser Asp Glu Asp His Leu Ser Leu Lys Glu
50     55     60
Phe Ser Glu Leu Glu Gln Ser Gly Tyr Tyr Val Cys Tyr Pro Arg Gly
65     70     75     80
Ser Lys Pro Glu Asp Ala Asn Phe Tyr Leu Tyr Leu Arg Ala Arg Val
85     90     95
Cys Glu Asn Cys Met Glu Met Asp Ala Lys Asn Ala Gln Cys Lys Lys
100    105    110
Lys Leu Gln Ala Leu Lys Lys Lys Asn Ala Gln Leu Lys Trp Lys Leu
115    120    125
Gln Ala Leu Lys Lys Lys Leu Ala Gln His His His His His His
130    135    140

```

```

<210> 114
<211> 482
<212> PRT
<213> Artificial Sequence

```

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<220>
<221> CHAIN
<223> Sequence of HJ-1-H1

```

```

<400> 114
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1      5      10      15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser His Tyr
20     25     30
Tyr Met Ala Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35     40     45
Thr Ser Ile Ser Tyr Glu Gly Asp Ile Thr Tyr Tyr Gly Asp Ser Val
50     55     60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65     70     75     80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Tyr Cys
85     90     95
Ala Ser Gln Thr Leu Arg Glu Ser Phe Asp Tyr Trp Gly Gln Gly Thr
100    105    110
Leu Val Thr Val Ser Ser Leu Glu Asp Leu Lys Asn Val Phe Pro Pro
115    120    125
Glu Val Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln
130    135    140
Lys Ala Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val
145    150    155    160
Glu Leu Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Cys
165    170    175

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Asp | Pro | Gln | Pro | Leu | Lys | Glu | Gln | Pro | Ala | Leu | Gln | Asp | Ser | Arg |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Tyr | Ala | Leu | Ser | Ser | Arg | Leu | Arg | Val | Ser | Ala | Thr | Phe | Trp | Gln | Asn |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Pro | Arg | Asn | His | Phe | Arg | Cys | Gln | Val | Gln | Phe | Tyr | Gly | Leu | Ser | Glu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Asn | Asp | Glu | Trp | Thr | Gln | Asp | Arg | Ala | Lys | Pro | Val | Thr | Gln | Ile | Val |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ser | Ala | Glu | Ala | Trp | Gly | Arg | Ala | Ser | Asp | Lys | Thr | His | Thr | Cys | Pro |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu | Val |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro | Glu | Val | Lys | Phe |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys | Thr | Lys | Pro |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser | Val | Leu | Thr |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     | 350 |     |     |     |  |
| Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro | Pro | Cys | Arg |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Trp | Cys | Leu | Val | Lys | Gly |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | His |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys | His | His | His | His |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| His | His |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |

<210> 115  
 <211> 203  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of HJ-1-L1

<400> 115  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly

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

<210> 116

<211> 457

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of HJ-1-H2/HJ-3-H2

<400> 116

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Glu | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ser |  |  |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |  |  |
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Ser | Asn | Tyr |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |
| Leu | Ile | Glu | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Ile |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Gly | Val | Ile | Asp | Pro | Gly | Val | Gly | Asp | Thr | Asn | Tyr | Asn | Glu | Asn | Phe |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Lys | Gly | Arg | Ala | Thr | Leu | Thr | Ala | Asp | Lys | Ser | Thr | Ser | Thr | Ala | Tyr |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Ile | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |  |  |
|     |     |     |     | 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |  |  |
| Ala | Arg | Glu | Asp | Asn | Thr | Gly | Thr | Ala | Phe | Asp | Tyr | Trp | Gly | Gln | Gly |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Thr | Thr | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val | Phe |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala | Leu |
| 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gly | Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser | Trp |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Asn | Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gln | Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys | Pro |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | Asp | Lys |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Lys | Asp | Tyr | Lys | Asp | Asp | Asp | Asp | Lys |     |     |     |     |     |     |     |
|     | 450 |     |     |     |     | 455 |     |     |     |     |     |     |     |     |     |

<210> 117  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of HJ-1-L2/HJ-3-L2

<400> 117

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

<210> 118

<211> 456

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Sequence of HJ-2-H1/HJ-4-H1

<400> 118

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Ala | Ser | Gln | Thr | Leu | Arg | Glu | Ser | Phe | Asp | Tyr | Trp | Gly | Gln | Gly | Thr |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Leu | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val | Phe | Pro |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |
| Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala | Leu | Gly |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser | Trp | Asn |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val | Leu | Gln |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |  |
| Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro | Ser | Ser |  |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |  |
| Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys | Pro | Ser |  |  |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |  |  |
| Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | Asp | Lys | Thr |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Gly | Gly | Pro | Ser |     |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |  |  |
| Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |
| Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |
| Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |  |  |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     |     | 320 |  |  |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr | Leu |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser | Cys |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |  |  |
| Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     | 380 |     |     |     |     |     |  |  |
| Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |
| Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |
| Asp | Tyr | Lys | Asp | Asp | Asp | Asp | Lys |     |     |     |     |     |     |     |     |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     |     |     |     |     |     |  |  |

<210> 119  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>

<221> CHAIN  
 <223> Sequence of HJ-2-L1/HJ-4-L1

<400> 119  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ala Asn Tyr  
 20 25 30  
 Leu Ser Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Gly Thr Ser Asn Leu Glu Val Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Lys Glu Phe Pro Arg  
 85 90 95  
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala  
 100 105 110  
 Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
 115 120 125  
 Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
 130 135 140  
 Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
 145 150 155 160  
 Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
 165 170 175  
 Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
 180 185 190  
 Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
 195 200 205  
 Phe Asn Arg Gly Glu Cys  
 210

<210> 120  
 <211> 483  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of HJ-1-H2

<400> 120  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Asn Tyr  
 20 25 30  
 Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Val Ile Asp Pro Gly Val Gly Asp Thr Asn Tyr Asn Glu Asn Phe  
 50 55 60

Lys Gly Arg Ala Thr Leu Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80  
 Ile Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Glu Asp Asn Thr Gly Thr Ala Phe Asp Tyr Trp Gly Gln Gly  
 100 105 110  
 Thr Thr Val Thr Val Ser Ser Leu Glu Asp Leu Lys Asn Val Phe Pro  
 115 120 125  
 Pro Glu Val Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr  
 130 135 140  
 Gln Lys Ala Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His  
 145 150 155 160  
 Val Glu Leu Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val  
 165 170 175  
 Cys Thr Asp Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Gln Asp Ser  
 180 185 190  
 Arg Tyr Ala Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln  
 195 200 205  
 Asn Pro Arg Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser  
 210 215 220  
 Glu Asn Asp Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile  
 225 230 235 240  
 Val Ser Ala Glu Ala Trp Gly Arg Ala Ser Asp Lys Thr His Thr Cys  
 245 250 255  
 Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu  
 260 265 270  
 Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu  
 275 280 285  
 Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys  
 290 295 300  
 Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys  
 305 310 315 320  
 Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu  
 325 330 335  
 Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys  
 340 345 350  
 Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys  
 355 360 365  
 Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys  
 370 375 380  
 Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys  
 385 390 395 400  
 Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln  
 405 410 415  
 Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly  
 420 425 430  
 Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln  
 435 440 445  
 Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn  
 450 455 460  
 His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys His His His  
 465 470 475 480  
 His His His

<210> 121  
 <211> 203  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of HJ-2-L2

<400> 121  
 Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly  
 1 5 10 15  
 Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Ser Ser Asp  
 20 25 30  
 Val Thr Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile  
 35 40 45  
 Tyr Tyr Val Ser Glu His Tyr Thr Gly Val Pro Asp Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Tyr Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala  
 65 70 75 80  
 Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln His His Arg Phe Pro Leu  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Lys Pro Asp Ile Gln  
 100 105 110  
 Asn Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser Lys Ser Ser Asp  
 115 120 125  
 Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln Thr Gln Val Ser  
 130 135 140  
 Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys Cys Val Leu Asp  
 145 150 155 160  
 Met Arg Ser Met Asp Phe Lys Ser Asn Ser Ala Val Ala Trp Ser Gln  
 165 170 175  
 Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe Gln Asn Ser Ile Ile Pro  
 180 185 190  
 Glu Asp Thr Phe Phe Pro Ser Pro Glu Ser Ser  
 195 200

<210> 122  
 <211> 454  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of HJ-3-H1

<400> 122  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Arg | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Ser | His | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Tyr | Met | Ala | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |
|     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Thr | Ser | Ile | Ser | Tyr | Glu | Gly | Asp | Ile | Thr | Tyr | Tyr | Gly | Asp | Ser | Val |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Lys | Gly | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asn | Ser | Lys | Asn | Thr | Leu | Tyr |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |
| Leu | Gln | Met | Asn | Ser | Leu | Arg | Ala | Glu | Asp | Thr | Ala | Thr | Tyr | Tyr | Cys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ala | Ser | Gln | Thr | Leu | Arg | Glu | Ser | Phe | Asp | Tyr | Trp | Gly | Gln | Gly | Thr |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Ile | Pro | Pro | Lys |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr | Trp |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu | Gln | Gly | Arg | Phe | His |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ile | Glu | Asn | Thr | Asp | Asp | Leu | Thr | Thr | Leu | Ile | Ile | Lys | Asp | Val | Gln |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu | Arg | Asn | Glu | Phe | Gly |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg | Ser | Ile | Asp | Lys | Thr |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro | Ser |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Pro | Pro | Cys | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Trp | Cys |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser |
|     |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     | 415 |     |     |
| Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |

435  
His His His His His  
450

440

445

<210> 123  
<211> 209  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> CHAIN  
<223> Sequence of HJ-3-L1

<400> 123  
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly  
1 5 10 15  
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ala Asn Tyr  
20 25 30  
Leu Ser Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Ile  
35 40 45  
Tyr Gly Thr Ser Asn Leu Glu Val Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60  
Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80  
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Lys Glu Phe Pro Arg  
85 90 95  
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser  
100 105 110  
Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Leu Ala Phe Val Val Ser  
115 120 125  
Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Thr  
130 135 140  
Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr Ala Gly Ala  
145 150 155 160  
Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
165 170 175  
Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
180 185 190  
Ala Ile Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Val Asp Ala Glu  
195 200 205  
Ala

<210> 124  
<211> 455  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> CHAIN  
<223> Sequence of HJ-4-H2

<400> 124  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Asn Tyr  
 20 25 30  
 Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Val Ile Asp Pro Gly Val Gly Asp Thr Asn Tyr Asn Glu Asn Phe  
 50 55 60  
 Lys Gly Arg Ala Thr Leu Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80  
 Ile Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Glu Asp Asn Thr Gly Thr Ala Phe Asp Tyr Trp Gly Gln Gly  
 100 105 110  
 Thr Thr Val Thr Val Ser Ser Gly Gly Gly Ser Gly Ile Pro Pro  
 115 120 125  
 Lys Ile Glu Cys Leu Pro Ile Asp Ile Ser Ile Asp Glu Gly Lys Val  
 130 135 140  
 Leu Thr Val Ala Ser Ala Phe Thr Gly Glu Pro Thr Pro Glu Val Thr  
 145 150 155 160  
 Trp Ser Thr Gly Gly Arg Lys Ile His Ser Gln Glu Gln Gly Arg Phe  
 165 170 175  
 His Ile Glu Asn Thr Asp Asp Leu Thr Thr Leu Ile Ile Lys Asp Val  
 180 185 190  
 Gln Lys Gln Asp Gly Gly Leu Tyr Thr Leu Thr Leu Arg Asn Glu Phe  
 195 200 205  
 Gly Ser Asp Ser Ala Thr Val Asn Ile His Ile Arg Ser Ile Asp Lys  
 210 215 220  
 Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro  
 225 230 235 240  
 Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser  
 245 250 255  
 Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
 260 265 270  
 Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
 275 280 285  
 Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val  
 290 295 300  
 Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
 305 310 315 320  
 Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
 325 330 335  
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
 340 345 350  
 Leu Pro Pro Cys Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp  
 355 360 365  
 Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu  
 370 375 380  
 Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu  
 385 390 395 400  
 Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |
| Lys | His | His | His | His | His | His |     |     |     |     |     |     |     |     |     |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     |     |     |     |     |     |  |  |

<210> 125  
 <211> 209  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Sequence of HJ-4-L2

<400> 125

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

Ala

<210> 126  
 <211> 449  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Heavy chain sequence of J1

<400> 126  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Asn Tyr  
 20 25 30  
 Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Val Ile Asp Pro Gly Val Gly Asp Thr Asn Tyr Asn Glu Asn Phe  
 50 55 60  
 Lys Gly Arg Ala Thr Leu Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80  
 Ile Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Glu Asp Asn Thr Gly Thr Ala Phe Asp Tyr Trp Gly Gln Gly  
 100 105 110  
 Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe  
 115 120 125  
 Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu  
 130 135 140  
 Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp  
 145 150 155 160  
 Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu  
 165 170 175  
 Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser  
 180 185 190  
 Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro  
 195 200 205  
 Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys  
 210 215 220  
 Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro  
 225 230 235 240  
 Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Tyr Ile Thr  
 245 250 255  
 Arg Glu Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
 260 265 270  
 Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
 275 280 285  
 Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val  
 290 295 300  
 Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
 305 310 315 320  
 Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
 325 330 335  
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
 340 345 350  
 Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr  
 355 360 365  
 Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 370 |     | 375 |     | 380 |     |     |     |     |     |     |     |     |     |     |     |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Lys |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 127  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.6 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 127 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Lys   | Ala | Gly | Ile | Arg | Gly | Ile | Pro | Pro | Lys | Ile | Glu | Ala | Leu | Pro | Ser |
| 1     | 5   | 10  | 15  |     |     |     |     |     |     |     |     |     |     |     |     |
| Asp   | Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Cys | Ala | Phe |
|       | 20  | 25  | 30  |     |     |     |     |     |     |     |     |     |     |     |     |
| Thr   | Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr | Trp | Ser | Cys | Gly | Gly | Arg | Lys |
|       | 35  | 40  | 45  |     |     |     |     |     |     |     |     |     |     |     |     |
| Ile   | His | Ser | Gln | Glu | Gln | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp |
|       | 50  | 55  | 60  |     |     |     |     |     |     |     |     |     |     |     |     |
| Leu   | Thr | Thr | Leu | Ile | Ile | Met | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu |
| 65    | 70  | 75  | 80  |     |     |     |     |     |     |     |     |     |     |     |     |
| Tyr   | Thr | Leu | Ser | Leu | Gly | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val |
|       | 85  | 90  | 95  |     |     |     |     |     |     |     |     |     |     |     |     |
| Asn   | Ile | His | Ile | Arg | Ser | Ile |     |     |     |     |     |     |     |     |     |
|       | 100 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 128  
 <211> 102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.16 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 128 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asp   | Gln | Pro | Gln | Phe | Ser | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Arg | Pro | Lys |
| 1     | 5   | 10  | 15  |     |     |     |     |     |     |     |     |     |     |     |     |
| Ala   | Phe | Val | Val | Ser | Val | Gly | Lys | Asp | Ala | Thr | Leu | Ser | Cys | Gln | Ile |
|       | 20  | 25  | 30  |     |     |     |     |     |     |     |     |     |     |     |     |

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

<210> 129  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.16 chain sequence

|           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 129 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly       | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp |
| 1         |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Glu       | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |
|           |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro       | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |
|           |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gln       | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Ser | Thr | Thr | Leu | Thr |
|           | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ile       | Lys | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu |
| 65        |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg       | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |
|           |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser       | Ile |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 130  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.17 chain sequence

|           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 130 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly       | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp | Ile | Ser | Ile | Asp |
| 1         |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Glu       | Gly | Lys | Cys | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr | Gly | Glu | Pro | Thr |
|           |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro       | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile | His | Ser | Gln | Glu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |    |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|----|--|
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |  |  |    |  |
| Gln | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Ser | Thr | Thr | Leu | Thr |  |  |    |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |    |  |
| Ile | Lys | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr | Thr | Leu | Thr | Leu |  |  |    |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     |     |  |  | 80 |  |
| Arg | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn | Ile | His | Ile | Arg |  |  |    |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |    |  |
| Ser | Ile |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |    |  |

<210> 131  
 <211> 98  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> T.18 chain sequence

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

<210> 132  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.24 chain sequence

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| Ser | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Arg | Pro | Lys | Ala | Phe | Val | Val | Ser |  |  |  |  |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |  |  |  |  |
| Val | Gly | Lys | Asp | Ala | Thr | Leu | Ser | Ser | Gln | Ile | Val | Gly | Asn | Pro | Phe |  |  |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |  |  |
| Pro | Gln | Val | Ser | Trp | Glu | Lys | Asp | Lys | Gln | Pro | Val | Thr | Ala | Gly | Val |  |  |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |  |  |

Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
 50 55 60  
 Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 65 70 75 80  
 Ala Ile Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

<210> 133  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.25 chain sequence

<400> 133  
 Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Lys Ala Ser Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Phe  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr Ala Gly Val  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
 50 55 60  
 Asp Leu Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
 65 70 75 80  
 Ala His Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Val Asp Ala Glu  
 85 90 95  
 Ala

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

<220>  
 <221> DOMAIN  
 <223> 0.26 chain sequence

<400> 134  
 Ser Gly Cys Pro Arg Phe Leu Thr Arg Pro Lys Ala Ser Val Val Ser  
 1 5 10 15  
 Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Phe  
 20 25 30  
 Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr Ala Gly Val  
 35 40 45  
 Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 50  |     | 55  |     | 60  |     |     |     |     |     |     |     |     |     |     |     |
| Asp | Leu | Gln | Leu | Ser | Asp | Ser | Gly | Gln | Tyr | Val | Ser | Arg | Ala | Arg | Asn |
| 65  |     | 70  |     | 75  |     | 80  |     |     |     |     |     |     |     |     |     |
| Ala | His | Gly | Glu | Ala | Phe | Ala | Cys | Leu | Gly | Leu | Gln | Val | Asp | Ala | Glu |
|     |     | 85  |     | 90  |     | 95  |     |     |     |     |     |     |     |     |     |

Ala

<210> 135  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.27 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 135 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser   | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Cys | Pro | Lys | Ala | Ser | Val | Val | Ser |
| 1     |     | 5   |     | 10  |     | 15  |     |     |     |     |     |     |     |     |     |
| Val   | Gly | Lys | Asp | Ala | Thr | Leu | Ser | Ser | Gln | Ile | Val | Gly | Asn | Pro | Phe |
|       | 20  |     | 25  |     | 30  |     |     |     |     |     |     |     |     |     |     |
| Pro   | Gln | Val | Ser | Trp | Glu | Lys | Asp | Lys | Gln | Pro | Val | Thr | Ala | Gly | Val |
|       | 35  |     | 40  |     | 45  |     |     |     |     |     |     |     |     |     |     |
| Arg   | Phe | Arg | Leu | Ala | Gln | Asp | Gly | Asp | Leu | Tyr | Arg | Leu | Lys | Ile | Leu |
|       | 50  |     | 55  |     | 60  |     |     |     |     |     |     |     |     |     |     |
| Asp   | Leu | Gln | Leu | Ser | Asp | Ser | Gly | Gln | Tyr | Val | Ser | Arg | Ala | Arg | Asn |
| 65    |     | 70  |     | 75  |     | 80  |     |     |     |     |     |     |     |     |     |
| Ala   | His | Gly | Glu | Ala | Phe | Ala | Cys | Leu | Gly | Leu | Gln | Val | Asp | Ala | Glu |
|       | 85  |     | 90  |     | 95  |     |     |     |     |     |     |     |     |     |     |

Ala

<210> 136  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.28 chain sequence

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 136 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser   | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Arg | Pro | Lys | Ala | Ser | Val | Val | Ser |
| 1     |     | 5   |     | 10  |     | 15  |     |     |     |     |     |     |     |     |     |
| Val   | Gly | Lys | Asp | Ala | Thr | Leu | Ser | Cys | Gln | Ile | Val | Gly | Asn | Pro | Phe |
|       | 20  |     | 25  |     | 30  |     |     |     |     |     |     |     |     |     |     |
| Pro   | Gln | Val | Ser | Trp | Glu | Lys | Asp | Lys | Gln | Pro | Val | Thr | Ala | Gly | Val |
|       | 35  |     | 40  |     | 45  |     |     |     |     |     |     |     |     |     |     |
| Arg   | Phe | Arg | Leu | Ala | Gln | Asp | Gly | Asp | Leu | Tyr | Arg | Leu | Lys | Ile | Leu |
|       | 50  |     | 55  |     | 60  |     |     |     |     |     |     |     |     |     |     |
| Asp   | Leu | Gln | Leu | Ser | Asp | Ser | Gly | Gln | Tyr | Val | Cys | Arg | Ala | Arg | Asn |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Ala | His | Gly | Glu | Ala | Phe | Ala | Cys | Leu | Gly | Leu | Gln | Val | Asp | Ala |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  | Glu |

Ala

<210> 137  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.29 chain sequence

<400> 137

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

Ala

<210> 138  
 <211> 97  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> 0.30 chain sequence

<400> 138

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Arg | Phe | Leu | Thr | Cys | Pro | Lys | Ala | Ser | Val | Val | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Val | Gly | Lys | Asp | Ala | Thr | Leu | Ser | Cys | Gln | Ile | Val | Gly | Asn | Pro | Phe |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro | Gln | Val | Ser | Trp | Glu | Lys | Asp | Lys | Gln | Pro | Val | Thr | Ala | Gly | Val |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Phe | Arg | Leu | Ala | Gln | Asp | Gly | Asp | Leu | Tyr | Arg | Leu | Lys | Ile | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Asp | Leu | Gln | Leu | Ser | Asp | Ser | Gly | Gln | Tyr | Val | Cys | Arg | Ala | Arg | Asn |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |

Ala His Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Val Asp Ala Glu  
85 90 95  
Ala

<210> 139  
<211> 97  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.31 chain sequence

<400> 139  
Ser Gly Ala Pro Arg Phe Leu Thr Arg Pro Lys Ala Ser Val Val Ser  
1 5 10 15  
Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Phe  
20 25 30  
Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr Ala Gly Val  
35 40 45  
Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
50 55 60  
Asp Cys Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
65 70 75 80  
Ala His Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Cys Asp Ala Glu  
85 90 95  
Ala

<210> 140  
<211> 97  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> 0.32 chain sequence

<400> 140  
Ser Gly Cys Pro Arg Phe Leu Thr Arg Pro Lys Ala Ser Val Val Ser  
1 5 10 15  
Val Gly Lys Asp Ala Thr Leu Ser Ser Gln Ile Val Gly Asn Pro Phe  
20 25 30  
Pro Gln Val Ser Trp Glu Lys Asp Lys Gln Pro Val Thr Ala Gly Val  
35 40 45  
Arg Phe Arg Leu Ala Gln Asp Gly Asp Leu Tyr Arg Leu Lys Ile Leu  
50 55 60  
Asp Cys Gln Leu Ser Asp Ser Gly Gln Tyr Val Ser Arg Ala Arg Asn  
65 70 75 80  
Ala His Gly Glu Ala Phe Ala Cys Leu Gly Leu Gln Cys Asp Ala Glu



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Ala | Arg | Gly | Gly | Ser | Ser | Tyr | Asp | Tyr | Phe | Asp | Tyr | Trp | Gly | Gln | Gly |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Thr | Thr | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Ser | Gly | Ala | Pro |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |
| Arg | Phe | Leu | Thr | Arg | Pro | Leu | Ala | Phe | Val | Val | Ser | Val | Gly | Lys | Asp |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Ala | Thr | Leu | Ser | Ser | Gln | Ile | Val | Gly | Asn | Pro | Thr | Pro | Gln | Val | Ser |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Trp | Glu | Lys | Asp | Lys | Gln | Pro | Val | Thr | Ala | Gly | Ala | Arg | Phe | Arg | Leu |  |  |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |
| Ala | Gln | Asp | Gly | Asp | Leu | Tyr | Arg | Leu | Lys | Ile | Leu | Asp | Leu | Gln | Leu |  |  |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |  |
| Ser | Asp | Ser | Gly | Gln | Tyr | Val | Ser | Arg | Ala | Arg | Asn | Ala | Ile | Gly | Glu |  |  |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Ala | Phe | Ala | Cys | Leu | Gly | Leu | Gln | Val | Asp | Ala | Glu | Ala | Asp | Lys | Thr |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro | Ser |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg |  |  |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |
| Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |
| Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Pro | Pro | Cys | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Trp | Cys |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     | 380 |     |     |     |     |     |  |  |
| Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala |  |  |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |  |  |
| Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |

<210> 143  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> First light chain sequence of PL-1

<400> 143  
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Pro Gly  
 1 5 10 15  
 Gln Arg Ala Thr Ile Thr Cys Arg Ala Ser Glu Ser Val Ser Ile His  
 20 25 30  
 Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
 35 40 45  
 Lys Leu Leu Ile Tyr Ala Ala Ser Lys Leu Glu Ser Gly Val Pro Ala  
 50 55 60  
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn  
 65 70 75 80  
 Pro Val Glu Ala Glu Asp Thr Ala Asn Tyr Tyr Cys Gln Gln Ser Phe  
 85 90 95  
 Glu Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly  
 100 105 110  
 Gly Gly Gly Ser Gly Ile Pro Pro Lys Ile Glu Cys Leu Pro Ile Asp  
 115 120 125  
 Ile Ser Ile Asp Glu Gly Lys Val Leu Thr Val Ala Ser Ala Phe Thr  
 130 135 140  
 Gly Glu Pro Thr Pro Glu Val Thr Trp Ser Thr Gly Gly Arg Lys Ile  
 145 150 155 160  
 His Ser Gln Glu Gln Gly Arg Phe His Ile Glu Asn Thr Asp Asp Leu  
 165 170 175  
 Thr Thr Leu Ile Ile Lys Asp Val Gln Lys Gln Asp Gly Gly Leu Tyr  
 180 185 190  
 Thr Leu Thr Leu Arg Asn Glu Phe Gly Ser Asp Ser Ala Thr Val Asn  
 195 200 205  
 Ile His Ile Arg Ser Ile  
 210

<210> 144  
 <211> 448  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Second heavy chain sequence of PL-1

<400> 144  
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
 20 25 30  
 Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Thr Phe Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Gln | Met | Asn | Ser | Leu | Arg | Ala | Glu | Asp | Thr | Ala | Ile | Tyr | Tyr | Cys |  |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |  |
| Ala | Arg | Thr | Gly | Trp | Leu | Gly | Pro | Phe | Asp | Tyr | Trp | Gly | Gln | Gly | Thr |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Leu | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val | Phe | Pro |  |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala | Leu | Gly |  |
|     |     |     | 130 |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser | Trp | Asn |  |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     |     | 160 |  |
| Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val | Leu | Gln |  |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |  |
| Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro | Ser | Ser |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |
| Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys | Pro | Ser |  |
|     |     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | Asp | Lys | Thr |  |
|     |     |     | 210 |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Ala | Gly | Gly | Pro | Ser |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala |  |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val |  |
|     |     |     | 290 |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |  |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Cys | Thr | Leu |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |  |
| Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Ser | Cys |  |
|     |     |     | 355 |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser |  |
|     |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp |  |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |

<210> 145  
 <211> 215  
 <212> PRT  
 <213> Artificial Sequence

<220>

<221> CHAIN  
 <223> Second light chain sequence of PL-1

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

<210> 146  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Light chain 1 sequence of P-O-T

<400> 146  
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Pro Gly  
 1 5 10 15  
 Gln Arg Ala Thr Ile Thr Cys Arg Ala Ser Glu Ser Val Ser Ile His  
 20 25 30  
 Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
 35 40 45  
 Lys Leu Leu Ile Tyr Ala Ala Ser Lys Leu Glu Ser Gly Val Pro Ala  
 50 55 60

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr | Ile | Asn |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |
| Pro | Val | Glu | Ala | Glu | Asp | Thr | Ala | Asn | Tyr | Tyr | Cys | Gln | Gln | Ser | Phe |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Glu | Asp | Pro | Leu | Thr | Phe | Gly | Gln | Gly | Thr | Lys | Leu | Glu | Ile | Lys | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Gly | Gly | Ser | Gly | Ile | Pro | Pro | Lys | Ile | Glu | Cys | Leu | Pro | Ile | Asp |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ile | Ser | Ile | Asp | Glu | Gly | Lys | Val | Leu | Thr | Val | Ala | Ser | Ala | Phe | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gly | Glu | Pro | Thr | Pro | Glu | Val | Thr | Trp | Ser | Thr | Gly | Gly | Arg | Lys | Ile |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| His | Ser | Gln | Glu | Gln | Gly | Arg | Phe | His | Ile | Glu | Asn | Thr | Asp | Asp | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Thr | Thr | Leu | Ile | Ile | Lys | Asp | Val | Gln | Lys | Gln | Asp | Gly | Gly | Leu | Tyr |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Thr | Leu | Thr | Leu | Arg | Asn | Glu | Phe | Gly | Ser | Asp | Ser | Ala | Thr | Val | Asn |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ile | His | Ile | Arg | Ser | Ile |     |     |     |     |     |     |     |     |     |     |
|     | 210 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 147

<211> 214

<212> PRT

<213> Artificial Sequence

<220>

<221> CHAIN

<223> Light chain 2 sequence of P-O-T

<400> 147

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ile | Gln | Met | Thr | Gln | Ser | Pro | Ser | Ser | Leu | Ser | Ala | Ser | Val | Gly |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Asp | Arg | Val | Thr | Ile | Thr | Cys | Arg | Ala | Ser | Glu | Asn | Ile | Tyr | Ser | Tyr |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Leu | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Gly | Lys | Ser | Pro | Lys | Leu | Leu | Ile |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Tyr | Asn | Ala | Arg | Thr | Leu | Ala | Glu | Gly | Val | Pro | Ser | Arg | Phe | Ser | Gly |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr | Ile | Ser | Ser | Leu | Gln | Pro |
| 65  |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Asp | Phe | Ala | Thr | Tyr | Tyr | Cys | Gln | Tyr | His | Ser | Gly | Ser | Pro | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Pro | Phe | Gly | Gly | Gly | Thr | Lys | Val | Glu | Ile | Lys | Arg | Thr | Val | Ala | Ala |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Ser | Val | Phe | Ile | Phe | Pro | Pro | Ser | Asp | Glu | Gln | Leu | Lys | Ser | Gly |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Thr | Ala | Ser | Val | Val | Cys | Leu | Leu | Asn | Asn | Phe | Tyr | Pro | Arg | Glu | Ala |
|     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| Lys | Val | Gln | Trp | Lys | Val | Asp | Asn | Ala | Leu | Gln | Ser | Gly | Asn | Ser | Gln |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |
| Glu | Ser | Val | Thr | Glu | Gln | Asp | Ser | Lys | Asp | Ser | Thr | Tyr | Ser | Leu | Ser |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |
| Ser | Thr | Leu | Thr | Leu | Ser | Lys | Ala | Asp | Tyr | Glu | Lys | His | Lys | Val | Tyr |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Ala | Cys | Glu | Val | Thr | His | Gln | Gly | Leu | Ser | Ser | Pro | Val | Thr | Lys | Ser |  |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Phe | Asn | Arg | Gly | Glu | Cys |     |     |     |     |     |     |     |     |     |     |  |  |
|     | 210 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |

<210> 148  
 <211> 675  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Heavy chain sequence of P-O-T

<400> 148

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Met | Gly | Arg | Ile | Asp | Pro | Asp | Ser | Thr | Gly | Ser | Lys | Tyr | Asn | Glu | 275 | 280 | 285 |
| Lys | Phe | Lys | Thr | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Ser | Thr | 290 | 295 | 300 |
| Val | Tyr | Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | 305 | 310 | 315 |
| Tyr | Cys | Ala | Arg | Glu | Gly | Ala | Tyr | Gly | Tyr | Tyr | Phe | Asp | Tyr | Trp | Gly | 320 | 325 | 330 |
| Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | 335 | 340 | 345 |
| Val | Phe | Pro | Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | 350 | 355 | 360 |
| Ala | Leu | Gly | Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | 365 | 370 | 375 |
| Ser | Trp | Asn | Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | 380 | 385 | 390 |
| Val | Leu | Gln | Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | 395 | 400 | 405 |
| Pro | Ser | Ser | Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | 410 | 415 | 420 |
| Lys | Pro | Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | 425 | 430 | 435 |
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | 440 | 445 | 450 |
| Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | 455 | 460 | 465 |
| Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | 470 | 475 | 480 |
| Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | 485 | 490 | 495 |
| His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | 500 | 505 | 510 |
| Arg | Val | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | 515 | 520 | 525 |
| Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | 530 | 535 | 540 |
| Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | 545 | 550 | 555 |
| Tyr | Thr | Leu | Pro | Pro | Ser | Arg | Asp | Glu | Leu | Thr | Lys | Asn | Gln | Val | Ser | 560 | 565 | 570 |
| Leu | Thr | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | 575 | 580 | 585 |
| Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | 590 | 595 | 600 |
| Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | 605 | 610 | 615 |
| Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | 620 | 625 | 630 |
| His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | 635 | 640 | 645 |
| Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |     |     |     | 650 | 655 | 660 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 665 | 670 | 675 |

<210> 149  
 <211> 214  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Light chain sequence of h1708-04

<400> 149  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Tyr  
 20 25 30  
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Asn Ala Arg Thr Leu Ala Glu Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Tyr His Ser Gly Ser Pro Leu  
 85 90 95  
 Pro Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala  
 100 105 110  
 Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
 115 120 125  
 Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
 130 135 140  
 Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
 145 150 155 160  
 Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
 165 170 175  
 Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
 180 185 190  
 Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
 195 200 205  
 Phe Asn Arg Gly Glu Cys  
 210

<210> 150  
 <211> 449  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> CHAIN  
 <223> Heavy chain sequence of h1708-04

<400> 150  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Asn | Tyr |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |
| Trp | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Gly | Arg | Ile | Asp | Pro | Asp | Ser | Thr | Gly | Ser | Lys | Tyr | Asn | Glu | Lys | Phe |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Lys | Thr | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Ser | Thr | Val | Tyr |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |  |  |
| Ala | Arg | Glu | Gly | Ala | Tyr | Gly | Tyr | Tyr | Phe | Asp | Tyr | Trp | Gly | Gln | Gly |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Thr | Leu | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val | Phe |  |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |
| Pro | Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala | Leu |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Gly | Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser | Trp |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Asn | Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val | Leu |  |  |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     |     | 175 |  |  |
| Gln | Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro | Ser |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Ser | Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys | Pro |  |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | Asp | Lys |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | Gly | Pro |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |  |  |
| Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn |  |  |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |  |  |
| Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Leu | Pro | Pro | Ser | Arg | Asp | Glu | Leu | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr |  |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |  |  |

|                                                                 |                                |  |     |  |     |
|-----------------------------------------------------------------|--------------------------------|--|-----|--|-----|
|                                                                 | 435                            |  | 440 |  | 445 |
| Lys                                                             |                                |  |     |  |     |
| <210>                                                           | 151                            |  |     |  |     |
| <211>                                                           | 218                            |  |     |  |     |
| <212>                                                           | PRT                            |  |     |  |     |
| <213>                                                           | Artificial Sequence            |  |     |  |     |
| <220>                                                           |                                |  |     |  |     |
| <221>                                                           | CHAIN                          |  |     |  |     |
| <223>                                                           | Light chain sequence of h1831K |  |     |  |     |
| <400>                                                           | 151                            |  |     |  |     |
| Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Pro Gly |                                |  |     |  |     |
| 1 5 10 15                                                       |                                |  |     |  |     |
| Gln Arg Ala Thr Ile Thr Cys Arg Ala Ser Glu Ser Val Ser Ile His |                                |  |     |  |     |
| 20 25 30                                                        |                                |  |     |  |     |
| Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro |                                |  |     |  |     |
| 35 40 45                                                        |                                |  |     |  |     |
| Lys Leu Leu Ile Tyr Ala Ala Ser Lys Leu Glu Ser Gly Val Pro Ala |                                |  |     |  |     |
| 50 55 60                                                        |                                |  |     |  |     |
| Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn |                                |  |     |  |     |
| 65 70 75 80                                                     |                                |  |     |  |     |
| Pro Val Glu Ala Glu Asp Thr Ala Asn Tyr Tyr Cys Gln Gln Ser Phe |                                |  |     |  |     |
| 85 90 95                                                        |                                |  |     |  |     |
| Glu Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg |                                |  |     |  |     |
| 100 105 110                                                     |                                |  |     |  |     |
| Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln |                                |  |     |  |     |
| 115 120 125                                                     |                                |  |     |  |     |
| Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr |                                |  |     |  |     |
| 130 135 140                                                     |                                |  |     |  |     |
| Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser |                                |  |     |  |     |
| 145 150 155 160                                                 |                                |  |     |  |     |
| Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr |                                |  |     |  |     |
| 165 170 175                                                     |                                |  |     |  |     |
| Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys |                                |  |     |  |     |
| 180 185 190                                                     |                                |  |     |  |     |
| His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro |                                |  |     |  |     |
| 195 200 205                                                     |                                |  |     |  |     |
| Val Thr Lys Ser Phe Asn Arg Gly Glu Cys                         |                                |  |     |  |     |
| 210 215                                                         |                                |  |     |  |     |

<400> 152

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ala | 1   | 5   | 10  | 15  |
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Ser | Tyr | 20  | 25  | 30  |     |
| Trp | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met | 35  | 40  | 45  |     |
| Gly | Arg | Ile | Thr | Pro | Ser | Ser | Gly | Phe | Ala | Met | Tyr | Asn | Glu | Lys | Phe | 50  | 55  | 60  |     |
| Lys | Asn | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Ser | Thr | Val | Tyr | 65  | 70  | 75  | 80  |
| Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | 85  | 90  | 95  |     |
| Ala | Arg | Gly | Gly | Ser | Ser | Tyr | Asp | Tyr | Phe | Asp | Tyr | Trp | Gly | Gln | Gly | 100 | 105 | 110 |     |
| Thr | Thr | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val | Phe | 115 | 120 | 125 |     |
| Pro | Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala | Leu | 130 | 135 | 140 |     |
| Gly | Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser | Trp | 145 | 150 | 155 | 160 |
| Asn | Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val | Leu | 165 | 170 | 175 |     |
| Gln | Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro | Ser | 180 | 185 | 190 |     |
| Ser | Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys | Pro | 195 | 200 | 205 |     |
| Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | Asp | Lys | 210 | 215 | 220 |     |
| Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | Gly | Pro | 225 | 230 | 235 | 240 |
| Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | 245 | 250 | 255 |     |
| Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | 260 | 265 | 270 |     |
| Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | 275 | 280 | 285 |     |
| Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | 290 | 295 | 300 |     |
| Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | 305 | 310 | 315 | 320 |
| Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | 325 | 330 | 335 |     |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | 340 | 345 | 350 |     |
| Leu | Pro | Pro | Ser | Arg | Asp | Glu | Leu | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | 355 | 360 | 365 |     |
| Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | 370 | 375 | 380 |     |
| Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | 385 | 390 | 395 | 400 |
| Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |
| Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |

Lys

<210> 153  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Light chain variable region sequence of h1708-04

<400> 153

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

<210> 154  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Heavy chain variable region sequence of h1708-04

<400> 154

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ala |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Asn | Tyr |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Trp | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Gly | Arg | Ile | Asp | Pro | Asp | Ser | Thr | Gly | Ser | Lys | Tyr | Asn | Glu | Lys | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

Lys Thr Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Glu Gly Ala Tyr Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly  
 100 105 110  
 Thr Leu Val Thr Val Ser Ser  
 115

<210> 155  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Light chain variable region sequence of h1831K

<400> 155  
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Pro Gly  
 1 5 10 15  
 Gln Arg Ala Thr Ile Thr Cys Arg Ala Ser Glu Ser Val Ser Ile His  
 20 25 30  
 Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
 35 40 45  
 Lys Leu Leu Ile Tyr Ala Ala Ser Lys Leu Glu Ser Gly Val Pro Ala  
 50 55 60  
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn  
 65 70 75 80  
 Pro Val Glu Ala Glu Asp Thr Ala Asn Tyr Tyr Cys Gln Gln Ser Phe  
 85 90 95  
 Glu Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 156  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Heavy chain variable region sequence of h1831K

<400> 156  
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
 20 25 30  
 Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Arg Ile Thr Pro Ser Ser Gly Phe Ala Met Tyr Asn Glu Lys Phe

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

<210> 157  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> HCDR1 sequence of h1708-04

<400> 157  
 Asn Tyr Trp Met His  
 1 5

<210> 158  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> HCDR2 sequence of h1708-04

<400> 158  
 Arg Ile Asp Pro Asp Ser Thr Gly Ser Lys Tyr Asn Glu Lys Phe Lys  
 1 5 10 15  
 Thr

<210> 159  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> HCDR3 sequence of h1708-04

<400> 159  
 Glu Gly Ala Tyr Gly Tyr Tyr Phe Asp Tyr  
 1 5 10

<210> 160  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> LCDR1 sequence of h1708-04  
  
 <400> 160  
 Arg Ala Ser Glu Asn Ile Tyr Ser Tyr Leu Ala  
 1 5 10  
  
 <210> 161  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> LCDR2 sequence of h1708-04  
  
 <400> 161  
 Asn Ala Arg Thr Leu Ala Glu  
 1 5  
  
 <210> 162  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> LCDR3 sequence of h1708-04  
  
 <400> 162  
 Gln Tyr His Ser Gly Ser Pro Leu Pro  
 1 5  
  
 <210> 163  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> DOMAIN  
 <223> HCDR1 sequence of h1831K

<400> 163  
Ser Tyr Trp Met His  
1 5

<210> 164  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> HCDR2 sequence of h1831K

<400> 164  
Arg Ile Thr Pro Ser Ser Gly Phe Ala Met Tyr Asn Glu Lys Phe Lys  
1 5 10 15  
Asn

<210> 165  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> HCDR3 sequence of h1831K

<400> 165  
Gly Gly Ser Ser Tyr Asp Tyr Phe Asp Tyr  
1 5 10

<210> 166  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> LCDR1 sequence of h1831K

<400> 166  
Arg Ala Ser Glu Ser Val Ser Ile His Gly Thr His Leu Met His  
1 5 10 15

<210> 167  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> LCDR2 sequence of h1831K

<400> 167  
 Ala Ala Ser Lys Leu Glu Ser  
 1 5

<210> 168  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> LCDR3 sequence of h1831K

<400> 168  
 Gln Gln Ser Phe Glu Asp Pro Leu Thr  
 1 5

<210> 169  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Heavy chain variable region sequence of L0

<400> 169  
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
 20 25 30  
 Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Thr Phe Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Ile Tyr Tyr Cys  
 85 90 95  
 Ala Arg Thr Gly Trp Leu Gly Pro Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110  
 Leu Val Thr Val Ser Ser  
 115

<210> 170  
 <211> 108

<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> Light chain variable region sequence of L0

<400> 170  
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15  
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Gly Ser Ser  
20 25 30  
Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
35 40 45  
Ile Tyr Gly Ala Phe Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60  
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80  
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro  
85 90 95  
Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105

<210> 171  
<211> 119  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> DOMAIN  
<223> Sequence of heavy chain variable region of J1

<400> 171  
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
1 5 10 15  
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Asn Tyr  
20 25 30  
Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45  
Gly Val Ile Asp Pro Gly Val Gly Asp Thr Asn Tyr Asn Glu Asn Phe  
50 55 60  
Lys Gly Arg Ala Thr Leu Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
65 70 75 80  
Ile Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95  
Ala Arg Glu Asp Asn Thr Gly Thr Ala Phe Asp Tyr Trp Gly Gln Gly  
100 105 110  
Thr Thr Val Thr Val Ser Ser  
115

<210> 172

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

<220>  
 <221> DOMAIN  
 <223> Sequence of light chain variable region of J1

<400> 172  
 Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly  
 1 5 10 15  
 Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Ser Ser Asp  
 20 25 30  
 Val Thr Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile  
 35 40 45  
 Tyr Tyr Val Ser Glu His Tyr Thr Gly Val Pro Asp Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Tyr Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala  
 65 70 75 80  
 Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln His His Arg Phe Pro Leu  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 173  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Amino acid sequence of C-terminal truncated sequence 1 of CH1

<400> 173  
 Ala Ser Thr Lys Gly  
 1 5

<210> 174  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Amino acid sequence of C-terminal truncated sequence 1 of CL

<400> 174  
 Arg Thr Val Ala Ser  
 1 5

<210> 175  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Amino acid sequence of linker sequence 1

<400> 175  
 Gly Gly Gly Gly Ser  
 1 5

<210> 176  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Amino acid sequence of linker sequence 2

<400> 176  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10

<210> 177  
 <211> 227  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Sequence of Fc portion of heavy chain constant region of holo-IgG1

<400> 177  
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly  
 1 5 10 15  
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30  
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45  
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60  
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
 65 70 75 80  
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95  
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Cys | Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Leu | Ser | Cys | Ala | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Val | Ser | Lys | Leu | Thr | Val |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 225 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 178

<211> 227

<212> PRT

<213> Artificial Sequence

<220>

<221> DOMAIN

<223> Sequence of Fc portion of heavy chain constant region of knob-IgG1

<400> 178

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

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
|     | 195 |     | 200 |     | 205 |
| His | Glu | Ala | Leu | His | Asn |
|     | 210 |     |     | His | Tyr |
|     |     |     |     | 215 | Thr |
|     |     |     |     |     | Gln |
|     |     |     |     |     | Lys |
|     |     |     |     |     | Ser |
|     |     |     |     |     | 220 |
|     |     |     |     |     | Leu |
|     |     |     |     |     | Ser |
|     |     |     |     |     | Leu |
|     |     |     |     |     | Ser |
|     |     |     |     |     |     |
| Pro | Gly | Lys |     |     |     |
| 225 |     |     |     |     |     |

<210> 179  
 <211> 103  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> DOMAIN  
 <223> Sequence of CH1 portion of heavy chain constant region of IgG1

|       |     |
|-------|-----|
| <400> | 179 |
| Ala   | Ser |
| 1     | Thr |
|       | Lys |
|       | Gly |
|       | 5   |
|       | Pro |
|       | Ser |
|       | Val |
|       | Phe |
|       | 10  |
|       | Pro |
|       | Leu |
|       | Ala |
|       | 15  |
|       | Pro |
|       | Ser |
|       | Ser |
|       | Lys |
|       | 20  |
|       | Gly |
|       | 25  |
|       | Thr |
|       | Ala |
|       | 30  |
|       | Ala |
|       | Leu |
|       | Val |
|       | Lys |
|       | 35  |
|       | Asp |
|       | Tyr |
|       | 40  |
|       | Thr |
|       | Ser |
|       | 45  |
|       | Leu |
|       | Gly |
|       | 50  |
|       | Thr |
|       | 55  |
|       | Pro |
|       | Ala |
|       | 60  |
|       | Ser |
|       | Ser |
|       | Leu |
|       | Gly |
|       | 65  |
|       | Thr |
|       | Gln |
|       | 70  |
|       | Thr |
|       | 75  |
|       | Val |
|       | Asp |
|       | 80  |
|       | Lys |
|       | 85  |
|       | Cys |
|       | 90  |
|       | Val |
|       | 95  |
|       | Lys |
|       | 100 |
|       | Ser |
|       | Pro |
|       | Glu |
|       | Val |
|       | Lys |

<210> 180  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Titin N-terminal 5AA

|       |     |
|-------|-----|
| <400> | 180 |
| Lys   | Ala |
| 1     | Gly |
|       | Ile |
|       | 5   |
|       | Arg |

<210> 181  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Obscurin N-terminal 5AA

<400> 181

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| Asp | Gln | Pro | Gln | Phe |
| 1   |     |     |     | 5   |