

# SEQUENCE LISTING

<110> MOLECULAR PARTNERS AG

<120> Novel Ankyrin Repeat Binding Proteins And Their Uses

<130> P028

<160> 95

<170> BiSSAP 1.3.6

<210> 1

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 1

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

<210> 2

<211> 159

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 2

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Asp | Arg | Glu | Gly | Trp | Thr | Pro | Leu | His | Leu | Ala | Ala | His | Gln | Gly |



<223> Spike protein binding domain

<400> 4

```
Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly Gln
1          5          10          15
Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala
20        25        30
Lys Asp Lys Ile Gly Val Thr Pro Leu His Ile Ala Ala Glu Val Gly
35        40        45
His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn
50        55        60
Ala Lys Asp Val Trp Gly Arg Thr Pro Leu His Leu Ala Ala Trp Ser
65        70        75        80
Gly His Leu Glu Ile Val Glu Val Leu Val Lys Ala Gly Ala Asp Val
85        90        95
Asn Ala Lys Asp Ile Ala Gly Ala Thr Pro Leu His Ala Ala Ala Leu
100       105       110
Phe Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Val Gly Ala Asp
115       120       125
Val Asn Ala Gln Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala
130       135       140
Arg Ala Gly His Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala
145       150       155
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<210> 5

<211> 159

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 5

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

<210> 6  
 <211> 159  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Spike protein binding domain

<400> 6  
 Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly Gln  
 1 5 10 15  
 Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala  
 20 25 30  
 Lys Asp Arg Glu Gly Ile Thr Pro Leu His Leu Ala Ala Gln His Gly  
 35 40 45  
 His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn  
 50 55 60  
 Ala Lys Asp Val Trp Gly Arg Thr Pro Leu His Leu Ala Ala Trp Gln  
 65 70 75 80  
 Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val  
 85 90 95  
 Asn Ala Lys Asp Leu Ala Gly Ala Thr Pro Leu His Val Ala Ala Leu  
 100 105 110  
 Tyr Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp  
 115 120 125  
 Val Asn Ala Gln Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala  
 130 135 140  
 Arg Ala Gly His Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala  
 145 150 155

<210> 7  
 <211> 126  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Spike protein binding domain

<400> 7  
 Gly Ser Asp Leu Gly Leu Lys Leu Leu Thr Ala Ala Lys Gln Gly Gln  
 1 5 10 15  
 Asp Asp Glu Val Arg Ile Leu Leu Ala Ala Gly Ala Asp Val Asn Ala  
 20 25 30  
 Lys Asp Tyr Arg Gly Leu Thr Pro Leu His Tyr Ala Ala Ala Ile Gly  
 35 40 45  
 His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn  
 50 55 60  
 Ala Lys Asp Gln Tyr Gly Ala Thr Pro Leu His Val Ala Ala Tyr Ile  
 65 70 75 80  
 Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val  
 85 90 95

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Gln | Asp | Phe | Ser | Gly | Ser | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

<210> 8

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 8

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

<210> 9

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 9

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Gln | Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

<210> 10

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 10

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

<210> 11

<211> 159

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 11

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Lys | Asp | Ser | Tyr | Gly | Trp | Thr | Pro | Leu | His | Val | Ala | Ala | Ile |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     |

<210> 12

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 12

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



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 13

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 13

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |  |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     |     | 320 |  |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Ile | Gly | Val | Thr | Pro |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |
| Leu | His | Ile | Ala | Ala | Glu | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |  |
|     |     | 355 |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |  |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Val | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ile | Ala | Gly | Ala |  |
| 385 |     |     |     |     | 390 |     |     |     | 395 |     |     |     |     |     | 400 |  |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Phe | Gly | His | Leu | Glu | Ile | Val | Glu |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Val | Leu | Leu | Lys | Val | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |  |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     |     | 430 |     |     |  |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |  |
| 465 |     |     |     |     | 470 |     |     |     | 475 |     |     |     |     |     | 480 |  |
| Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Glu | Gly | Trp | Thr | Pro | Leu | His | Leu | Ala | Ala | His | Gln | Gly | His | Leu | Glu |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |
| Val | Phe | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Val | Gly | His | Leu |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |
| Asp | Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Pro | Ala | Ala | Ile | Tyr | Gly | His |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |
| Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |  |
|     |     | 595 |     |     |     | 600 |     |     |     |     |     | 605 |     |     |     |  |
| Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |
| His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |
| Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |  |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |  |
| Pro | Thr | Gly | Ser | Asp | Leu | Gly | Asn | Lys | Leu | Leu | Asp | Ala | Ala | Trp | Val |  |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |  |
| Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val |  |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Lys | Asp | Trp | Gln | Gly | Glu | Thr | Pro | Leu | His | Leu | Ala | Ala | Thr |
| 690 |     |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Lys | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Val | Val | Gly | Tyr | Thr | Pro | Leu | His | Val | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Ser | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Val | His | Gly | Tyr | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ala | Gln | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 14

<211> 817

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 14

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     | 285 |     |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     | 320 |     |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Ile | Gly | Val | Thr | Pro |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | His | Ile | Ala | Ala | Glu | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     | 350 |     |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |
|     |     | 355 |     |     |     |     | 360 |     |     |     | 365 |     |     |     |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Val | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ile | Ala | Gly | Ala |
| 385 |     |     |     |     | 390 |     |     |     | 395 |     |     |     |     |     | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Leu | Phe | Gly | His | Leu | Glu | Ile | Val | Glu |     |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     |     | 415 |     |
| Val | Leu | Leu | Lys | Val | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     | 460 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |
| 465 |     |     |     |     | 470 |     |     |     | 475 |     |     |     |     |     | 480 |
| Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu |
|     |     |     |     | 485 |     |     |     | 490 |     |     |     |     |     | 495 |     |
| Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg |
|     |     |     | 500 |     |     |     | 505 |     |     |     |     |     | 510 |     |     |
| Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     | 540 |     |     |     |     |     |
| Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu |
| 545 |     |     |     |     | 550 |     |     |     | 555 |     |     |     |     |     | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys |
|     |     |     |     | 565 |     |     |     | 570 |     |     |     |     |     | 575 |     |
| Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His |
|     |     |     | 580 |     |     |     | 585 |     |     |     |     |     | 590 |     |     |
| Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
|     |     |     |     | 645 |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala | 180 | 185 | 190 |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | 195 | 200 | 205 |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu | 210 | 215 | 220 |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | 225 | 230 | 235 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | 245 | 250 | 255 |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | 260 | 265 | 270 |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 275 | 280 | 285 |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | 290 | 295 | 300 |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | 305 | 310 | 315 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro | 325 | 330 | 335 |
| Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | 340 | 345 | 350 |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | 355 | 360 | 365 |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 370 | 375 | 380 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | 385 | 390 | 395 |
| Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | 405 | 410 | 415 |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | 420 | 425 | 430 |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | 435 | 440 | 445 |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 450 | 455 | 460 |
| Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |     | 465 | 470 | 475 |
| Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | 485 | 490 | 495 |
| Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | 500 | 505 | 510 |
| Glu | Gly | Lys | Thr | Pro | Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | 515 | 520 | 525 |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |
| Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | 545 | 550 | 555 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | 565 | 570 | 575 |
| Asp | Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | 580 | 585 | 590 |
| Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | 595 | 600 | 605 |

Gln Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala Arg Ala Gly  
 610 615 620  
 His Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr  
 625 630 635 640  
 Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr  
 645 650 655  
 Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala  
 660 665 670  
 Gly Gln Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val  
 675 680 685  
 Asn Ala Lys Asp Arg Glu Gly Ile Thr Pro Leu His Leu Ala Ala Gln  
 690 695 700  
 His Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp  
 705 710 715 720  
 Val Asn Ala Lys Asp Val Trp Gly Arg Thr Pro Leu His Leu Ala Ala  
 725 730 735  
 Trp Gln Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala  
 740 745 750  
 Asp Val Asn Ala Lys Asp Leu Ala Gly Ala Thr Pro Leu His Val Ala  
 755 760 765  
 Ala Leu Tyr Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly  
 770 775 780  
 Ala Asp Val Asn Ala Gln Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu  
 785 790 795 800  
 Ala Ala Arg Ala Gly His Gln Asp Ile Ala Glu Val Leu Gln Lys Ala  
 805 810 815  
 Ala

<210> 16

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 16

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Leu | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Leu | Thr | Ala | Ala | Lys | Gln | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |     |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Tyr | Arg | Gly | Leu | Thr | Pro |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |
| Leu | His | Tyr | Ala | Ala | Ala | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Tyr | Gly | Ala | Thr |
|     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |
| Pro | Leu | His | Val | Ala | Ala | Tyr | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Phe | Ser | Gly | Ser |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |     |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |
|     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu |
| 465 |     |     |     | 470 |     |     |     |     |     | 475 |     |     |     | 480 |     |
| Gly | Lys | Thr | Pro | Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |     |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     |     | 595 |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     | 760 |     |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 17

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 17

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala | Asp |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |  |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |  |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Trp | Lys | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Trp | Ala | Ala | Gln | Val | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu |  |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Asp | Leu | Gly | Trp | Thr | Pro |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |
| Leu | His | Ile | Ala | Ala | Trp | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |  |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Thr | Gly | Arg | Thr |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Pro | Leu | His | His | Ala | Ala | Thr | Glu | Gly | His | Leu | Glu | Ile | Val | Lys | Val |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asp | Val | Gly | His |  |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Leu | Trp | Gly | His | Glu | Asp | Ile | Ala | Glu |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |  |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Ile |  |
| 465 |     |     |     | 470 |     |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Gly | Val | Thr | Pro | Leu | His | Ile | Ala | Ala | Glu | Val | Gly | His | Leu | Glu | Ile |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |  |
|     |     |     | 500 |     |     |     | 505 |     |     |     |     |     | 510 |     |     |  |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Ser | Gly | His | Leu | Glu |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |

```

Ile Val Glu Val Leu Val Lys Ala Gly Ala Asp Val Asn Ala Lys Asp
530                    535                    540
Ile Ala Gly Ala Thr Pro Leu His Ala Ala Ala Leu Phe Gly His Leu
545                    550                    555                    560
Glu Ile Val Glu Val Leu Leu Lys Val Gly Ala Asp Val Asn Ala Gln
565                    570                    575
Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala Arg Ala Gly His
580                    585                    590
Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro
595                    600                    605
Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro
610                    615                    620
Thr Gly Ser Asp Leu Gly Asn Lys Leu Leu Asp Ala Ala Trp Val Gly
625                    630                    635                    640
Gln Asp Asp Glu Val Arg Ile Leu Leu Ala Ala Gly Ala Asp Val Asn
645                    650                    655
Ala Lys Asp Trp Gln Gly Glu Thr Pro Leu His Leu Ala Ala Thr Lys
660                    665                    670
Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val
675                    680                    685
Asn Ala Lys Asp Val Val Gly Tyr Thr Pro Leu His Val Ala Ala Ser
690                    695                    700
Gln Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp
705                    710                    715                    720
Val Asn Ala Gln Asp Val His Gly Tyr Thr Pro Ala Asp Leu Ala Ala
725                    730                    735
Gln Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala
740                    745                    750

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<210> 18

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 18

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

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     | 320 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     |     | 480 |
| Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly |
| 610 |     |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |     |
| His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     |     | 640 |
| Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Pro | Thr | Gly | Ser | Asp | Leu | Gly | Leu | Lys | Leu | Leu | Thr | Ala | Ala | Lys | Gln |
|     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |     |
| Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val |
|     | 675 |     |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Tyr | Arg | Gly | Leu | Thr | Pro | Leu | His | Tyr | Ala | Ala | Ala |
| 690 |     |     |     |     | 695 |     |     |     |     |     | 700 |     |     |     |     |
| Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     | 710 |     |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Gln | Tyr | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     |     |     | 735 |     |
| Tyr | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Phe | Ser | Gly | Ser | Thr | Pro | Ala | Asp | Leu | Ala |
|     | 755 |     |     |     |     | 760 |     |     |     |     |     | 765 |     |     |     |
| Ala | Glu | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
| 770 |     |     |     |     | 775 |     |     |     |     |     | 780 |     |     |     |     |

<210> 19

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 19

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala | Asp |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |  |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |  |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |  |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |  |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |  |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |  |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     | 320 |  |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Ile | Gly | Val | Thr | Pro |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |
| Leu | His | Ile | Ala | Ala | Glu | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |  |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |  |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |  |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Val | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ile | Ala | Gly | Ala |  |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     |     | 400 |  |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Phe | Gly | His | Leu | Glu | Ile | Val | Glu |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |  |
| Val | Leu | Leu | Lys | Val | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |  |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |  |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |  |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |  |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     |     | 480 |  |
| Leu | Gly | Asn | Lys | Leu | Leu | Asp | Ala | Ala | Trp | Val | Gly | Gln | Asp | Asp | Glu |  |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     |     |     | 495 |     |  |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Trp |  |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |     |  |
| Gln | Gly | Glu | Thr | Pro | Leu | His | Leu | Ala | Ala | Thr | Lys | Gly | His | Leu | Glu |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Val | Gly | Tyr | Thr | Pro | Leu | His | Val | Ala | Ala | Ser | Gln | Gly | His | Leu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     |     | 575 |
| Asp | Val | His | Gly | Tyr | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Gln | Ala | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Trp | Lys | Leu | Leu | Trp | Ala | Ala | Gln | Val | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |
| Ala | Lys | Asp | Asp | Leu | Gly | Trp | Thr | Pro | Leu | His | Ile | Ala | Ala | Trp | Val |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Phe | Thr | Gly | Arg | Thr | Pro | Leu | His | His | Ala | Ala | Thr |
|     |     | 690 |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Glu | Gly | His | Leu | Glu | Ile | Val | Lys | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Gln | Asp | Asp | Val | Gly | His | Thr | Pro | Ala | Asp | Leu | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     |     | 735 |
| Leu | Trp | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |

<210> 20

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 20

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     | 320 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     |     | 480 |
| Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
| 530 |     |     |     |     |     | 535 |     |     |     | 540 |     |     |     |     |     |
| Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly |
| 610 |     |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |     |
| His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     |     | 640 |
| Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Pro | Thr | Gly | Ser | Asp | Leu | Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala |
|     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |     |
| Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val |
|     | 675 |     |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Val | Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val |
| 690 |     |     |     |     | 695 |     |     |     |     |     | 700 |     |     |     |     |
| Ala | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     |     |     | 735 |     |
| Arg | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala |
|     | 755 |     |     |     | 760 |     |     |     |     |     |     | 765 |     |     |     |
| Ala | Phe | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
| 770 |     |     |     |     | 775 |     |     |     |     |     | 780 |     |     |     |     |

<210> 21

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 21

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala | Asp |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |  |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Arg | Ala | Gly | Gln | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |     |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |  |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | His | Lys | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu |  |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Phe | Gly | Gln | Thr | Pro |  |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |  |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ser | Ile | Gly | Tyr | Thr |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Trp | Ile | Gly | Ile |  |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |  |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu |  |
| 465 |     |     |     | 470 |     |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Gly | Lys | Thr | Pro | Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |  |
|     |     |     | 500 |     |     |     | 505 |     |     |     |     |     | 510 |     |     |  |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     |     | 575 |
| Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |
| Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     |     | 690 |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     | 760 |     |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 22

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 22

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 | Asp |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     | Ser |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     | Thr |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | Ala |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | Ala |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 | Ala |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     | Gly |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     | Leu |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | Ala |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | Asp |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 | Lys |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     | Pro |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Asn | Lys |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     | Leu |
| Leu | Asp | Ala | Ala | Trp | Val | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | Leu |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Trp | Gln | Gly | Glu | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | Pro |
| Leu | His | Leu | Ala | Ala | Thr | Lys | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 | Leu |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Val | Gly | Tyr |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     | Thr |
| Pro | Leu | His | Val | Ala | Ala | Ser | Gln | Gly | His | Leu | Glu | Ile | Val | Glu |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     | Val |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Val | His | Gly |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | Tyr |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Gln | Ala | Gly | His | Glu | Asp | Ile | Ala |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | Glu |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 | Pro |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     | Leu |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     | Val |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     | Glu |
| Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | Ile |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     | Val |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |  |  |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu | Glu |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |  |  |
|     |     | 530 |     |     |     | 535 |     |     |     |     |     | 540 |     |     |     |  |  |
| Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His | Leu |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |  |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |  |  |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |
| Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His |  |  |
|     |     | 580 |     |     |     |     | 585 |     |     |     |     |     | 590 |     |     |  |  |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |  |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |  |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |  |
|     |     | 610 |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |  |  |
| Thr | Gly | Ser | Asp | Leu | Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly |  |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |  |
| Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn |  |  |
|     |     |     | 645 |     |     |     |     |     | 650 |     |     |     |     | 655 |     |  |  |
| Ala | Lys | Asp | Val | Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala |  |  |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |  |  |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |  |  |
|     |     | 675 |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |  |  |
| Asn | Ala | Lys | Asp | Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg |  |  |
|     |     | 690 |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |  |  |
| Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |  |  |
| 705 |     |     |     |     | 710 |     |     |     | 715 |     |     |     |     |     | 720 |  |  |
| Val | Asn | Ala | Gln | Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala |  |  |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     |     |     | 735 |     |  |  |
| Phe | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |  |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |  |

<210> 23

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 23

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala | Asp |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |  |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Arg | Ala | Gly | Gln | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |     |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | His | Lys | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu |  |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Phe | Gly | Gln | Thr | Pro |  |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ser | Ile | Gly | Tyr | Thr |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | Glu | Ile | Val | Glu | Val |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Trp | Ile | Gly | Ile |  |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu |  |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |  |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu |  |
| 465 |     |     |     | 470 |     |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu | Ile |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |  |
|     |     |     | 500 |     |     |     | 505 |     |     |     |     |     | 510 |     |     |  |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu | Glu |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |

```

Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp
530                    535                    540
Leu Ala Gly Ala Thr Pro Leu His Val Ala Ala Leu Tyr Gly His Leu
545                    550                    555                    560
Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln
565                    570                    575
Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala Arg Ala Gly His
580                    585                    590
Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro
595                    600                    605
Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro
610                    615                    620
Thr Gly Ser Asp Leu Gly Asn Lys Leu Leu Asp Ala Ala Trp Val Gly
625                    630                    635                    640
Gln Asp Asp Glu Val Arg Ile Leu Leu Ala Ala Gly Ala Asp Val Asn
645                    650                    655
Ala Lys Asp Trp Gln Gly Glu Thr Pro Leu His Leu Ala Ala Thr Lys
660                    665                    670
Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val
675                    680                    685
Asn Ala Lys Asp Val Val Gly Tyr Thr Pro Leu His Val Ala Ala Ser
690                    695                    700
Gln Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp
705                    710                    715                    720
Val Asn Ala Gln Asp Val His Gly Tyr Thr Pro Ala Asp Leu Ala Ala
725                    730                    735
Gln Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala
740                    745                    750

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<210> 24

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 24

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

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |     |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     | 335 |     |     |
| Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |
|     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |     |
| Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |
|     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |     |
| Leu | Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     | 495 |     |     |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     |     | 510 |     |     |
| Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     |     | 595 |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu | Leu | His | Ala | Ala | Gln | Tyr | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro | Leu | His | Ile | Ala | Ala | Phe | His |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr | Pro | Leu | His | Leu | Ala | Ala | Ala |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Glu | Ser | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |

<210> 25

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 25

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala | 145 | 150 | 155 | 160 |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | 165 | 170 | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala | 180 | 185 | 190 |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | 195 | 200 | 205 |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu | 210 | 215 | 220 |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | 225 | 230 | 235 | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | 245 | 250 | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | 260 | 265 | 270 |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 275 | 280 | 285 |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | 290 | 295 | 300 |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | 305 | 310 | 315 | 320 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro | 325 | 330 | 335 |     |
| Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | 340 | 345 | 350 |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | 355 | 360 | 365 |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 370 | 375 | 380 |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | 385 | 390 | 395 | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | 405 | 410 | 415 |     |
| Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | 420 | 425 | 430 |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | 435 | 440 | 445 |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 450 | 455 | 460 |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | 465 | 470 | 475 | 480 |
| Leu | Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | 485 | 490 | 495 |     |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | 500 | 505 | 510 |     |
| Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | 515 | 520 | 525 |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |     |
| Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | 545 | 550 | 555 | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | 565 | 570 | 575 |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     | 645 |     |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Glu | Thr | Gly | Phe | Thr | Pro | Leu | His | Val | Ala | Ala | Glu | Lys |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | His | Phe | Gly | Phe | Thr | Pro | Leu | His | Leu | Val | Ser | Glu |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Ser | Tyr | Gly | Trp | Thr | Pro | Leu | His | Val | Ala | Ala |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Ile | Leu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     | 740 |     |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 26

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 26

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | His | Ala | Ala | Gln | Tyr | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |     |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | Glu | Asp | Ile | Ala | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Phe |
| 465 |     |     |     | 470 |     |     |     |     |     | 475 |     |     |     |     | 480 |
| Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | Ile |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ser |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | Glu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |
| Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |
| Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |
| Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     | Gln |
| Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     | Ala |
| Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     | 640 |
| His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |
| Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 | Gln |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     | Val |
| Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     | Leu |
| Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     | 720 |
| Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |
| Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |

<210> 27

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 27

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala | 145 | 150 | 155 | 160 |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | 165 | 170 | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala | 180 | 185 | 190 |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | 195 | 200 | 205 |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu | 210 | 215 | 220 |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | 225 | 230 | 235 | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | 245 | 250 | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | 260 | 265 | 270 |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 275 | 280 | 285 |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | 290 | 295 | 300 |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | 305 | 310 | 315 | 320 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Glu | Thr | Gly | Phe | Thr | Pro | 325 | 330 | 335 |     |
| Leu | His | Val | Ala | Ala | Glu | Lys | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | 340 | 345 | 350 |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | His | Phe | Gly | Phe | Thr | 355 | 360 | 365 |     |
| Pro | Leu | His | Leu | Val | Ser | Glu | Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 370 | 375 | 380 |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ser | Tyr | Gly | Trp | 385 | 390 | 395 | 400 |
| Thr | Pro | Leu | His | Val | Ala | Ala | Ile | Leu | Gly | His | Leu | Glu | Ile | Val | Glu | 405 | 410 | 415 |     |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | 420 | 425 | 430 |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | 435 | 440 | 445 |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 450 | 455 | 460 |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | 465 | 470 | 475 | 480 |
| Leu | Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | 485 | 490 | 495 |     |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | 500 | 505 | 510 |     |
| Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | 515 | 520 | 525 |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |     |
| Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | 545 | 550 | 555 | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | 565 | 570 | 575 |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     | 645 |     |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro | Leu | His | Val | Ala | Ala | Gln | Glu |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala |
|     |     | 740 |     |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 28

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 28

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Glu | Gly | Ile | Thr | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | His | Val | Ala | Ala | His | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Arg | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | His | Ala | Gly | Ala |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Ser | Gly | His | Leu | Glu | Ile | Val | Glu |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp |
| 465 |     |     |     | 470 |     |     |     |     |     | 475 |     |     |     |     | 480 |
| Leu | Gly | Asn | Lys | Leu | Leu | Asp | Ala | Ala | Trp | Val | Gly | Gln | Asp | Asp | Glu |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Trp |
|     |     | 500 |     |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Gln | Gly | Glu | Thr | Pro | Leu | His | Leu | Ala | Ala | Thr | Lys | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Val | Gly | Tyr | Thr | Pro | Leu | His | Val | Ala | Ala | Ser | Gln | Gly | His | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Val | His | Gly | Tyr | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Gln | Ala | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     |     | 595 |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro | Leu | His | Val | Ala | Ala | Gln | Glu |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     | 690 |     |     |     |     | 695 |     |     |     | 700 |     |     |     |     |     |
| Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     | 750 |     |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     | 760 |     |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 29

<211> 784

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 29

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala | Asp |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |  |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |  |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Asn | Lys | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Asp | Ala | Ala | Trp | Val | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu |  |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     | 320 |  |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Trp | Gln | Gly | Glu | Thr | Pro |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |  |
| Leu | His | Leu | Ala | Ala | Thr | Lys | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |  |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Val | Gly | Tyr | Thr |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     | 365 |     |     |     |     |  |
| Pro | Leu | His | Val | Ala | Ala | Ser | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Val | His | Gly | Tyr |  |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     |     | 400 |  |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Gln | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |  |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |  |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |  |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |  |
|     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |  |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val |  |
|     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |     |  |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu |  |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     |     | 480 |  |
| Gly | Trp | Thr | Pro | Leu | His | Leu | Ala | Ala | His | Gln | Gly | His | Leu | Glu | Ile |  |
|     |     |     | 485 |     |     |     | 490 |     |     |     |     |     | 495 |     |     |  |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |  |
|     |     | 500 |     |     |     | 505 |     |     |     |     |     | 510 |     |     |     |  |
| Phe | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Val | Gly | His | Leu | Glu |  |
|     |     | 515 |     |     |     | 520 |     |     |     |     | 525 |     |     |     |     |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Pro | Ala | Ala | Ile | Tyr | Gly | His | Leu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Gln | Glu | Gly | Ile | Thr | Pro | Leu | His | Val | Ala | Ala | His | Gln |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     |     | 690 |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Arg | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Asn | Ala | Lys | Asp | His | Ala | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Leu | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     | 760 |     |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 30

<211> 817

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 30

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 | Asp |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 | Ser |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 | Ala |     |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     | Gly |     |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     | Leu |     |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 | Lys |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     | Leu |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |
| Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 | Leu |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 | Thr |     |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu | Ile | Val | Glu |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     | Val |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |
| Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     | Gly |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     | Ala |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     | Thr |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     | 480 |
| Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |
| Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     | Gln |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 500 |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |
| Glu | Gly | Ile | Thr | Pro | Leu | His | Val | Ala | Ala | His | Gln | Gly | His | Leu | Glu |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |
| Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Arg | Gly | His | Leu |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |  |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys |  |  |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     |     | 575 |     |  |  |
| Asp | His | Ala | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Ser | Gly | His |  |  |
|     |     | 580 |     |     |     |     | 585 |     |     |     |     |     | 590 |     |     |  |  |
| Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |  |  |
|     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |     |  |  |
| Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly |  |  |
|     | 610 |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |     |  |  |
| His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr |  |  |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     |     | 640 |  |  |
| Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |  |  |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |  |  |
| Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala |  |  |
|     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |     |  |  |
| Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |  |  |
|     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     |  |  |
| Asn | Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln |  |  |
|     | 690 |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |     |  |  |
| His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |  |  |
| 705 |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     |     | 720 |  |  |
| Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala |  |  |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     |     |     | 735 |     |  |  |
| Trp | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |  |  |
|     | 740 |     |     |     |     | 745 |     |     |     |     |     |     | 750 |     |     |  |  |
| Asp | Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala |  |  |
|     | 755 |     |     |     |     | 760 |     |     |     |     |     |     | 765 |     |     |  |  |
| Ala | Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |  |  |
|     | 770 |     |     |     | 775 |     |     |     |     |     | 780 |     |     |     |     |  |  |
| Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu |  |  |
| 785 |     |     |     | 790 |     |     |     |     |     | 795 |     |     |     |     | 800 |  |  |
| Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala |  |  |
|     |     |     | 805 |     |     |     |     | 810 |     |     |     |     |     | 815 |     |  |  |

Ala

<210> 31  
 <211> 817  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 31  
 Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala Arg Ala Gly Gln  
 1 5 10 15

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |     |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |  |
| Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala | Ala | Arg | Asn | Gly |     |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |  |
| His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |     |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |  |
| Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu | Ala | Ala | Asn | Glu |     |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |  |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |     |  |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |     |  |
| Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp | Ile | Ala | Ala | Asp |     |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |  |
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser |     |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr |     |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |  |
| Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala |     |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |  |
| Arg | Ala | Gly | Gln | Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala |     |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     |     | 175 |     |  |
| Asp | Val | Asn | Ala | Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala |     |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |  |
| Ala | Arg | Asn | Gly | His | Leu | Lys | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly |     |  |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Phe | Ala | Gly | Lys | Thr | Pro | Leu | His | Leu |     |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |  |
| Ala | Ala | Asn | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |     |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |  |
| Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Ile | Phe | Gly | Lys | Thr | Pro | Ala | Asp |     |  |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |     |  |
| Ile | Ala | Ala | Asp | Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys |     |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |  |
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |     |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |  |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu |     |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     |     | 300 |     |     |     |     |  |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu |     |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |     |  |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro |     |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |     |  |
| Leu | His | Leu | Ala | Ala | Gln | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |     |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |     |  |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr |     |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |  |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val |     |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala |     |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |     |  |
| Thr | Pro | Leu | His | Val | Ala | Ala | Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu |     |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |     |  |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly |     |  |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     |     | 430 |     |     |     |  |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala |     |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |  |



<220>

<223> Multi-specific binding protein

<400> 32

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |     |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Glu | Gly | His | Glu | Asp | Ile | Ala | Glu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val |
|     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |     |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |     |
| Gly | Lys | Thr | Pro | Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     |     | 510 |     |     |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu |
|     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |     |
| Val | Ser | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu |
| 545 |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |     |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |     |
| Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His |
|     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |     |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     | 615 |     |     |     | 620 |     |     |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly |
| 625 |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |     |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |     |
| Ala | Lys | Asp | Gln | Glu | Gly | Ile | Thr | Pro | Leu | His | Val | Ala | Ala | His | Gln |
|     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     | 675 |     |     |     | 680 |     |     |     | 685 |     |     |     |     |     |     |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp |
|     | 690 |     |     |     | 695 |     |     |     | 700 |     |     |     |     |     |     |
| Arg | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     | 710 |     |     |     | 715 |     |     |     |     |     | 720 |     |
| Val | Asn | Ala | Lys | Asp | His | Ala | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala |
|     |     |     | 725 |     |     |     | 730 |     |     |     |     |     | 735 |     |     |
| Leu | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |
|     | 740 |     |     |     | 745 |     |     |     |     |     |     | 750 |     |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     | 755 |     |     |     | 760 |     |     |     |     |     | 765 |     |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     | 775 |     |     |     | 780 |     |     |     |     |     |     |

<210> 33  
<211> 784

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 33

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Leu | His | His | Ala | Ala | Thr | Glu | Gly | His | Leu | Glu | Ile | Val | Lys | Val | 370 | 375 | 380 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asp | Val | Gly | His | 385 | 390 | 395 |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Leu | Trp | Gly | His | Glu | Asp | Ile | Ala | Glu | 405 | 410 | 415 |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | 420 | 425 | 430 |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | 435 | 440 | 445 |
| Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | 450 | 455 | 460 |
| Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Glu | 465 | 470 | 475 |
| Gly | Ile | Thr | Pro | Leu | His | Val | Ala | Ala | His | Gln | Gly | His | Leu | Glu | Ile | 485 | 490 | 495 |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | 500 | 505 | 510 |
| Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Arg | Gly | His | Leu | Glu | 515 | 520 | 525 |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |
| His | Ala | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Ser | Gly | His | Leu | 545 | 550 | 555 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | 565 | 570 | 575 |
| Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | 580 | 585 | 590 |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | 595 | 600 | 605 |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 610 | 615 | 620 |
| Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | 625 | 630 | 635 |
| Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | 645 | 650 | 655 |
| Ala | Lys | Asp | Arg | Glu | Gly | Ile | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | His | 660 | 665 | 670 |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | 675 | 680 | 685 |
| Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | 690 | 695 | 700 |
| Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | 705 | 710 | 715 |
| Val | Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala | 725 | 730 | 735 |
| Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | 740 | 745 | 750 |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | 755 | 760 | 765 |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | 770 | 775 | 780 |

<210> 34  
 <211> 784  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 34  
 Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala Arg Ala Gly Gln  
 1 5 10 15  
 Asp Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala  
 20 25 30  
 Lys Asp Tyr Phe Ser His Thr Pro Leu His Leu Ala Ala Arg Asn Gly  
 35 40 45  
 His Leu Lys Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn  
 50 55 60  
 Ala Lys Asp Phe Ala Gly Lys Thr Pro Leu His Leu Ala Ala Asn Glu  
 65 70 75 80  
 Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val  
 85 90 95  
 Asn Ala Gln Asp Ile Phe Gly Lys Thr Pro Ala Asp Ile Ala Ala Asp  
 100 105 110  
 Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser  
 115 120 125  
 Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr Pro Thr  
 130 135 140  
 Pro Thr Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala  
 145 150 155 160  
 Arg Ala Gly Gln Asp Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala  
 165 170 175  
 Asp Val Asn Ala Lys Asp Tyr Phe Ser His Thr Pro Leu His Leu Ala  
 180 185 190  
 Ala Arg Asn Gly His Leu Lys Ile Val Glu Val Leu Leu Lys Ala Gly  
 195 200 205  
 Ala Asp Val Asn Ala Lys Asp Phe Ala Gly Lys Thr Pro Leu His Leu  
 210 215 220  
 Ala Ala Asn Glu Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala  
 225 230 235 240  
 Gly Ala Asp Val Asn Ala Gln Asp Ile Phe Gly Lys Thr Pro Ala Asp  
 245 250 255  
 Ile Ala Ala Asp Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys  
 260 265 270  
 Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro  
 275 280 285  
 Thr Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu  
 290 295 300  
 Leu Gln Ala Ala Arg Ala Gly Gln Leu Asp Glu Val Arg Glu Leu Leu  
 305 310 315 320  
 Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Arg Glu Gly Ile Thr Pro  
 325 330 335  
 Leu His Leu Ala Ala Gln His Gly His Leu Glu Ile Val Glu Val Leu

53/133

770

775

780

&lt;210&gt; 35

&lt;211&gt; 751

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Multi-specific binding protein

&lt;400&gt; 35

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro | 325 | 330 | 335 |
| Leu | His | Val | Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | 340 | 345 | 350 |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | 355 | 360 | 365 |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 370 | 375 | 380 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | 385 | 390 | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | 405 | 410 | 415 |
| Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | 420 | 425 | 430 |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | 435 | 440 | 445 |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 450 | 455 | 460 |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | 465 | 470 | 475 |
| Leu | Gly | Gln | Lys | Leu | Leu | His | Ala | Ala | Gln | Tyr | Gly | Gln | Asp | Asp | Glu | 485 | 490 | 495 |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | 500 | 505 | 510 |
| Gln | Gly | Asn | Thr | Pro | Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | 515 | 520 | 525 |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |
| Gln | Trp | Gly | Leu | Thr | Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | 545 | 550 | 555 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | 565 | 570 | 575 |
| Asp | Asn | Tyr | Gly | Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | 580 | 585 | 590 |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | 595 | 600 | 605 |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 610 | 615 | 620 |
| Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu | Leu | His | Ala | Ala | Gln | Tyr | Gly | 625 | 630 | 635 |
| Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | 645 | 650 | 655 |
| Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro | Leu | His | Ile | Ala | Ala | Phe | His | 660 | 665 | 670 |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | 675 | 680 | 685 |
| Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr | Pro | Leu | His | Leu | Ala | Ala | Ala | 690 | 695 | 700 |
| Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | 705 | 710 | 715 |
| Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala | 725 | 730 | 735 |
| Glu | Ser | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     | 740 | 745 | 750 |

<210> 36  
 <211> 784  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 36  
 Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala Arg Ala Gly Gln  
 1 5 10 15  
 Asp Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala  
 20 25 30  
 Lys Asp Tyr Phe Ser His Thr Pro Leu His Leu Ala Ala Arg Asn Gly  
 35 40 45  
 His Leu Lys Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn  
 50 55 60  
 Ala Lys Asp Phe Ala Gly Lys Thr Pro Leu His Leu Ala Ala Asn Glu  
 65 70 75 80  
 Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val  
 85 90 95  
 Asn Ala Gln Asp Ile Phe Gly Lys Thr Pro Ala Asp Ile Ala Ala Asp  
 100 105 110  
 Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser  
 115 120 125  
 Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr Pro Thr  
 130 135 140  
 Pro Thr Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala  
 145 150 155 160  
 Arg Ala Gly Gln Asp Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala  
 165 170 175  
 Asp Val Asn Ala Lys Asp Tyr Phe Ser His Thr Pro Leu His Leu Ala  
 180 185 190  
 Ala Arg Asn Gly His Leu Lys Ile Val Glu Val Leu Leu Lys Ala Gly  
 195 200 205  
 Ala Asp Val Asn Ala Lys Asp Phe Ala Gly Lys Thr Pro Leu His Leu  
 210 215 220  
 Ala Ala Asn Glu Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala  
 225 230 235 240  
 Gly Ala Asp Val Asn Ala Gln Asp Ile Phe Gly Lys Thr Pro Ala Asp  
 245 250 255  
 Ile Ala Ala Asp Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys  
 260 265 270  
 Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro  
 275 280 285  
 Thr Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu  
 290 295 300  
 Leu Gln Ala Ala Arg Ala Gly Gln Leu Asp Glu Val Arg Glu Leu Leu  
 305 310 315 320  
 Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Gln Glu Gly Ile Thr Pro  
 325 330 335  
 Leu His Val Ala Ala His Gln Gly His Leu Glu Ile Val Glu Val Leu

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770

775

780

&lt;210&gt; 37

&lt;211&gt; 784

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Multi-specific binding protein

&lt;400&gt; 37

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

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

<210> 38  
 <211> 784  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 38

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

|                                                                 |     |     |
|-----------------------------------------------------------------|-----|-----|
| 290                                                             | 295 | 300 |
| Leu Leu Ala Ala Gln Ala Gly Gln Asp Asp Glu Val Arg Ile Leu Leu |     |     |
| 305                                                             | 310 | 315 |
| Ala Ala Gly Ala Asp Val Asn Ala Lys Asp Val Phe Gly Gln Thr Pro |     |     |
|                                                                 | 325 | 330 |
| Leu His Val Ala Ala Val Ala Gly His Leu Glu Ile Val Glu Val Leu |     |     |
|                                                                 | 340 | 345 |
| Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Ser Ile Gly Tyr Thr |     |     |
|                                                                 | 355 | 360 |
| Pro Leu His His Ala Ala Arg Val Gly His Leu Glu Ile Val Glu Val |     |     |
|                                                                 | 370 | 375 |
| Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln Asp Trp Ile Gly Ile |     |     |
| 385                                                             | 390 | 395 |
| Thr Pro Ala Asp Leu Ala Ala Phe Glu Gly His Glu Asp Ile Ala Glu |     |     |
|                                                                 | 405 | 410 |
| Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Thr Pro |     |     |
|                                                                 | 420 | 425 |
| Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp Leu |     |     |
|                                                                 | 435 | 440 |
| Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly Gln Leu Asp Glu Val |     |     |
|                                                                 | 450 | 455 |
| Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Arg Glu |     |     |
| 465                                                             | 470 | 475 |
| Gly Ile Thr Pro Leu His Leu Ala Ala Gln His Gly His Leu Glu Ile |     |     |
|                                                                 | 485 | 490 |
| Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Val |     |     |
|                                                                 | 500 | 505 |
| Trp Gly Arg Thr Pro Leu His Leu Ala Ala Trp Gln Gly His Leu Glu |     |     |
|                                                                 | 515 | 520 |
| Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp |     |     |
|                                                                 | 530 | 535 |
| Leu Ala Gly Ala Thr Pro Leu His Val Ala Ala Leu Tyr Gly His Leu |     |     |
| 545                                                             | 550 | 555 |
| Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln |     |     |
|                                                                 | 565 | 570 |
| Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala Arg Ala Gly His |     |     |
|                                                                 | 580 | 585 |
| Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro |     |     |
|                                                                 | 595 | 600 |
| Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro |     |     |
|                                                                 | 610 | 615 |
| Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly |     |     |
| 625                                                             | 630 | 635 |
| Gln Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn |     |     |
|                                                                 | 645 | 650 |
| Ala Lys Asp Gln Glu Gly Ile Thr Pro Leu His Val Ala Ala His Gln |     |     |
|                                                                 | 660 | 665 |
| Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val |     |     |
|                                                                 | 675 | 680 |
| Asn Ala Lys Asp Val Trp Gly Arg Thr Pro Leu His Leu Ala Ala Trp |     |     |
|                                                                 | 690 | 695 |
| Arg Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp |     |     |
| 705                                                             | 710 | 715 |
| Val Asn Ala Lys Asp His Ala Gly Ala Thr Pro Leu His Ala Ala Ala |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |
| Leu | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |  |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |  |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |  |  |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |  |  |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |  |  |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |  |

<210> 39  
 <211> 751  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 39

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 275 | 280 | 285 |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | 290 | 295 | 300 |
| Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | 305 | 310 | 315 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Glu | Gly | Ile | Thr | Pro | 325 | 330 | 335 |
| Leu | His | Val | Ala | Ala | His | Gln | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | 340 | 345 | 350 |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | 355 | 360 | 365 |
| Pro | Leu | His | Leu | Ala | Ala | Trp | Arg | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 370 | 375 | 380 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | His | Ala | Gly | Ala | 385 | 390 | 395 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | 405 | 410 | 415 |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | 420 | 425 | 430 |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | 435 | 440 | 445 |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 450 | 455 | 460 |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | 465 | 470 | 475 |
| Leu | Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | 485 | 490 | 495 |
| Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | 500 | 505 | 510 |
| Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | 515 | 520 | 525 |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |
| Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | 545 | 550 | 555 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | 565 | 570 | 575 |
| Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | 580 | 585 | 590 |
| Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | 595 | 600 | 605 |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 610 | 615 | 620 |
| Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu | Leu | His | Ala | Ala | Gln | Tyr | Gly | 625 | 630 | 635 |
| Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | 645 | 650 | 655 |
| Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro | Leu | His | Ile | Ala | Ala | Phe | His | 660 | 665 | 670 |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | 675 | 680 | 685 |
| Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr | Pro | Leu | His | Leu | Ala | Ala | Ala | 690 | 695 | 700 |

Trp Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp  
705 710 715 720  
Val Asn Ala Gln Asp Asn Tyr Gly Gln Thr Pro Ala Asp Leu Ala Ala  
725 730 735  
Glu Ser Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala  
740 745 750

<210> 40  
<211> 784  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Multi-specific binding protein

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

|                                                                 |     |     |     |     |
|-----------------------------------------------------------------|-----|-----|-----|-----|
| 290                                                             |     | 295 |     | 300 |
| Leu Gln Ala Ala Arg Ala Gly Gln Leu Asp Glu Val Arg Glu Leu Leu |     |     |     |     |
| 305                                                             |     | 310 |     | 315 |
| Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Arg Glu Gly Ile Thr Pro |     |     |     |     |
|                                                                 | 325 |     | 330 | 335 |
| Leu His Leu Ala Ala Gln His Gly His Leu Glu Ile Val Glu Val Leu |     |     |     |     |
|                                                                 | 340 |     | 345 | 350 |
| Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Val Trp Gly Arg Thr |     |     |     |     |
|                                                                 | 355 |     | 360 | 365 |
| Pro Leu His Leu Ala Ala Trp Gln Gly His Leu Glu Ile Val Glu Val |     |     |     |     |
|                                                                 | 370 |     | 375 | 380 |
| Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Leu Ala Gly Ala |     |     |     |     |
| 385                                                             |     | 390 |     | 395 |
| Thr Pro Leu His Val Ala Ala Leu Tyr Gly His Leu Glu Ile Val Glu |     |     |     |     |
|                                                                 | 405 |     | 410 | 415 |
| Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln Asp Lys Ser Gly |     |     |     |     |
|                                                                 | 420 |     | 425 | 430 |
| Lys Thr Pro Ala Asp Leu Ala Ala Arg Ala Gly His Gln Asp Ile Ala |     |     |     |     |
|                                                                 | 435 |     | 440 | 445 |
| Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Thr |     |     |     |     |
|                                                                 | 450 |     | 455 | 460 |
| Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp     |     |     |     |     |
| 465                                                             |     | 470 |     | 475 |
| Leu Gly His Lys Leu Leu Leu Ala Ala Gln Ala Gly Gln Asp Asp Glu |     |     |     |     |
|                                                                 | 485 |     | 490 | 495 |
| Val Arg Ile Leu Leu Ala Ala Gly Ala Asp Val Asn Ala Lys Asp Val |     |     |     |     |
|                                                                 | 500 |     | 505 | 510 |
| Phe Gly Gln Thr Pro Leu His Val Ala Ala Val Ala Gly His Leu Glu |     |     |     |     |
|                                                                 | 515 |     | 520 | 525 |
| Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp |     |     |     |     |
|                                                                 | 530 |     | 535 | 540 |
| Ser Ile Gly Tyr Thr Pro Leu His His Ala Ala Arg Val Gly His Leu |     |     |     |     |
| 545                                                             |     | 550 |     | 555 |
| Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln |     |     |     |     |
|                                                                 | 565 |     | 570 | 575 |
| Asp Trp Ile Gly Ile Thr Pro Ala Asp Leu Ala Ala Phe Glu Gly His |     |     |     |     |
|                                                                 | 580 |     | 585 | 590 |
| Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro |     |     |     |     |
|                                                                 | 595 |     | 600 | 605 |
| Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro     |     |     |     |     |
|                                                                 | 610 |     | 615 | 620 |
| Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly |     |     |     |     |
| 625                                                             |     | 630 |     | 635 |
| Gln Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn |     |     |     |     |
|                                                                 | 645 |     | 650 | 655 |
| Ala Lys Asp Glu Thr Gly Phe Thr Pro Leu His Val Ala Ala Glu Lys |     |     |     |     |
|                                                                 | 660 |     | 665 | 670 |
| Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val |     |     |     |     |
|                                                                 | 675 |     | 680 | 685 |
| Asn Ala Lys Asp His Phe Gly Phe Thr Pro Leu His Leu Val Ser Glu |     |     |     |     |
|                                                                 | 690 |     | 695 | 700 |
| Trp Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp |     |     |     |     |
| 705                                                             |     | 710 |     | 715 |
| Val Asn Ala Lys Asp Ser Tyr Gly Trp Thr Pro Leu His Val Ala Ala |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Gly | His | 725 | Leu | Glu | Ile | Val | 730 | Glu | Val | Leu | Leu | Lys | 735 | Ala | Gly | Ala |
|     |     |     | 740 |     |     |     |     |     | 745 |     |     |     |     |     |     | 750 |     |     |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |     |     |     |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     |     |     |     | 765 |     |     |     |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |     |
|     | 770 |     |     |     |     | 775 |     |     |     |     |     |     |     | 780 |     |     |     |     |

<210> 41

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 41

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 275 | 280 | 285 |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu | 290 | 295 | 300 |
| Leu | His | Ala | Ala | Gln | Tyr | Gly | Gln | Asp | Asp | Glu | Val | Arg | Ile | Leu | Leu | 305 | 310 | 315 |
| Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro | 325 | 330 | 335 |
| Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | 340 | 345 | 350 |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr | 355 | 360 | 365 |
| Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 370 | 375 | 380 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln | 385 | 390 | 395 |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | Glu | Asp | Ile | Ala | Glu | 405 | 410 | 415 |
| Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | 420 | 425 | 430 |
| Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | 435 | 440 | 445 |
| Gly | His | Lys | Leu | Leu | Leu | Ala | Ala | Gln | Ala | Gly | Gln | Asp | Asp | Glu | Val | 450 | 455 | 460 |
| Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Phe | 465 | 470 | 475 |
| Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | Ile | 485 | 490 | 495 |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Ser | 500 | 505 | 510 |
| Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu | Glu | 515 | 520 | 525 |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | 530 | 535 | 540 |
| Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | Glu | 545 | 550 | 555 |
| Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | 565 | 570 | 575 |
| Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 580 | 585 | 590 |
| Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | 595 | 600 | 605 |
| Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | 610 | 615 | 620 |
| Lys | Asp | Gln | Glu | Gly | Ile | Thr | Pro | Leu | His | Val | Ala | Ala | His | Gln | Gly | 625 | 630 | 635 |
| His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | 645 | 650 | 655 |
| Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Arg | 660 | 665 | 670 |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | 675 | 680 | 685 |
| Asn | Ala | Lys | Asp | His | Ala | Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | 690 | 695 | 700 |

Ser Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp  
705 710 715 720  
Val Asn Ala Gln Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala  
725 730 735  
Arg Ala Gly His Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala  
740 745 750

<210> 42  
<211> 784  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Multi-specific binding protein

<400> 42  
Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala Arg Ala Gly Gln  
1 5 10 15  
Asp Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala  
20 25 30  
Lys Asp Tyr Phe Ser His Thr Pro Leu His Leu Ala Ala Arg Asn Gly  
35 40 45  
His Leu Lys Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn  
50 55 60  
Ala Lys Asp Phe Ala Gly Lys Thr Pro Leu His Leu Ala Ala Asn Glu  
65 70 75 80  
Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val  
85 90 95  
Asn Ala Gln Asp Ile Phe Gly Lys Thr Pro Ala Asp Ile Ala Ala Asp  
100 105 110  
Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser  
115 120 125  
Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Pro Thr  
130 135 140  
Pro Thr Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Glu Ala Ala  
145 150 155 160  
Arg Ala Gly Gln Asp Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala  
165 170 175  
Asp Val Asn Ala Lys Asp Tyr Phe Ser His Thr Pro Leu His Leu Ala  
180 185 190  
Ala Arg Asn Gly His Leu Lys Ile Val Glu Val Leu Leu Lys Ala Gly  
195 200 205  
Ala Asp Val Asn Ala Lys Asp Phe Ala Gly Lys Thr Pro Leu His Leu  
210 215 220  
Ala Ala Asn Glu Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala  
225 230 235 240  
Gly Ala Asp Val Asn Ala Gln Asp Ile Phe Gly Lys Thr Pro Ala Asp  
245 250 255  
Ile Ala Ala Asp Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys  
260 265 270  
Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro  
275 280 285  
Thr Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp Leu Gly Lys Lys Leu

|                                                                 |     |     |     |     |
|-----------------------------------------------------------------|-----|-----|-----|-----|
| 290                                                             |     | 295 |     | 300 |
| Leu Gln Ala Ala Arg Ala Gly Gln Leu Asp Glu Val Arg Glu Leu Leu |     |     |     |     |
| 305                                                             |     | 310 |     | 315 |
| Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Glu Thr Gly Phe Thr Pro |     |     |     |     |
|                                                                 | 325 |     | 330 | 335 |
| Leu His Val Ala Ala Glu Lys Gly His Leu Glu Ile Val Glu Val Leu |     |     |     |     |
|                                                                 | 340 |     | 345 | 350 |
| Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp His Phe Gly Phe Thr |     |     |     |     |
|                                                                 | 355 |     | 360 | 365 |
| Pro Leu His Leu Val Ser Glu Trp Gly His Leu Glu Ile Val Glu Val |     |     |     |     |
|                                                                 | 370 |     | 375 | 380 |
| Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp Ser Tyr Gly Trp |     |     |     |     |
| 385                                                             |     | 390 |     | 395 |
| Thr Pro Leu His Val Ala Ala Ile Leu Gly His Leu Glu Ile Val Glu |     |     |     |     |
|                                                                 | 405 |     | 410 | 415 |
| Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln Asp Lys Ser Gly |     |     |     |     |
|                                                                 | 420 |     | 425 | 430 |
| Lys Thr Pro Ala Asp Leu Ala Ala Arg Ala Gly His Gln Asp Ile Ala |     |     |     |     |
|                                                                 | 435 |     | 440 | 445 |
| Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Thr |     |     |     |     |
|                                                                 | 450 |     | 455 | 460 |
| Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp     |     |     |     |     |
| 465                                                             |     | 470 |     | 475 |
| Leu Gly His Lys Leu Leu Leu Ala Ala Gln Ala Gly Gln Asp Asp Glu |     |     |     |     |
|                                                                 | 485 |     | 490 | 495 |
| Val Arg Ile Leu Leu Ala Ala Gly Ala Asp Val Asn Ala Lys Asp Val |     |     |     |     |
|                                                                 | 500 |     | 505 | 510 |
| Phe Gly Gln Thr Pro Leu His Val Ala Ala Val Ala Gly His Leu Glu |     |     |     |     |
|                                                                 | 515 |     | 520 | 525 |
| Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Lys Asp |     |     |     |     |
|                                                                 | 530 |     | 535 | 540 |
| Ser Ile Gly Tyr Thr Pro Leu His His Ala Ala Arg Val Gly His Leu |     |     |     |     |
| 545                                                             |     | 550 |     | 555 |
| Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn Ala Gln |     |     |     |     |
|                                                                 | 565 |     | 570 | 575 |
| Asp Trp Ile Gly Ile Thr Pro Ala Asp Leu Ala Ala Phe Glu Gly His |     |     |     |     |
|                                                                 | 580 |     | 585 | 590 |
| Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly Ser Pro Thr Pro |     |     |     |     |
|                                                                 | 595 |     | 600 | 605 |
| Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr Pro     |     |     |     |     |
|                                                                 | 610 |     | 615 | 620 |
| Thr Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly |     |     |     |     |
| 625                                                             |     | 630 |     | 635 |
| Gln Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn |     |     |     |     |
|                                                                 | 645 |     | 650 | 655 |
| Ala Lys Asp Arg Glu Gly Ile Thr Pro Leu His Leu Ala Ala Gln His |     |     |     |     |
|                                                                 | 660 |     | 665 | 670 |
| Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val |     |     |     |     |
|                                                                 | 675 |     | 680 | 685 |
| Asn Ala Lys Asp Val Trp Gly Arg Thr Pro Leu His Leu Ala Ala Trp |     |     |     |     |
|                                                                 | 690 |     | 695 | 700 |
| Gln Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp |     |     |     |     |
| 705                                                             |     | 710 |     | 715 |
| Val Asn Ala Lys Asp Leu Ala Gly Ala Thr Pro Leu His Val Ala Ala |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |
| Leu | Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala |  |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |  |
| Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala |  |  |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |  |  |
| Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |  |  |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |  |

<210> 43

<211> 703

<212> PRT

<213> Artificial Sequence

<220>

<223> Target domain of spike protein

<400> 43

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

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<210> 44  
 <211> 1209  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Target domain of spike protein

<400> 44  
 Val Asn Leu Thr Thr Arg Thr Gln Leu Pro Pro Ala Tyr Thr Asn Ser  
 1 5 10 15  
 Phe Thr Arg Gly Val Tyr Tyr Pro Asp Lys Val Phe Arg Ser Ser Val  
 20 25 30  
 Leu His Ser Thr Gln Asp Leu Phe Leu Pro Phe Phe Ser Asn Val Thr  
 35 40 45  
 Trp Phe His Ala Ile His Val Ser Gly Thr Asn Gly Thr Lys Arg Phe  
 50 55 60  
 Asp Asn Pro Val Leu Pro Phe Asn Asp Gly Val Tyr Phe Ala Ser Thr  
 65 70 75 80  
 Glu Lys Ser Asn Ile Ile Arg Gly Trp Ile Phe Gly Thr Thr Leu Asp  
 85 90 95  
 Ser Lys Thr Gln Ser Leu Leu Ile Val Asn Asn Ala Thr Asn Val Val  
 100 105 110  
 Ile Lys Val Cys Glu Phe Gln Phe Cys Asn Asp Pro Phe Leu Gly Val  
 115 120 125  
 Tyr Tyr His Lys Asn Asn Lys Ser Trp Met Glu Ser Glu Phe Arg Val  
 130 135 140  
 Tyr Ser Ser Ala Asn Asn Cys Thr Phe Glu Tyr Val Ser Gln Pro Phe  
 145 150 155 160  
 Leu Met Asp Leu Glu Gly Lys Gln Gly Asn Phe Lys Asn Leu Arg Glu  
 165 170 175  
 Phe Val Phe Lys Asn Ile Asp Gly Tyr Phe Lys Ile Tyr Ser Lys His  
 180 185 190  
 Thr Pro Ile Asn Leu Val Arg Asp Leu Pro Gln Gly Phe Ser Ala Leu  
 195 200 205  
 Glu Pro Leu Val Asp Leu Pro Ile Gly Ile Asn Ile Thr Arg Phe Gln  
 210 215 220  
 Thr Leu Leu Ala Leu His Arg Ser Tyr Leu Thr Pro Gly Asp Ser Ser  
 225 230 235 240  
 Ser Gly Trp Thr Ala Gly Ala Ala Ala Tyr Tyr Val Gly Tyr Leu Gln  
 245 250 255  
 Pro Arg Thr Phe Leu Leu Lys Tyr Asn Glu Asn Gly Thr Ile Thr Asp  
 260 265 270  
 Ala Val Asp Cys Ala Leu Asp Pro Leu Ser Glu Thr Lys Cys Thr Leu  
 275 280 285  
 Lys Ser Phe Thr Val Glu Lys Gly Ile Tyr Gln Thr Ser Asn Phe Arg  
 290 295 300  
 Val Gln Pro Thr Glu Ser Ile Val Arg Phe Pro Asn Ile Thr Asn Leu  
 305 310 315 320  
 Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Arg Phe Ala Ser Val Tyr  
 325 330 335  
 Ala Trp Asn Arg Lys Arg Ile Ser Asn Cys Val Ala Asp Tyr Ser Val

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|      |     |      |      |     |      |      |      |     |      |      |      |      |     |      |      |  |  |
|------|-----|------|------|-----|------|------|------|-----|------|------|------|------|-----|------|------|--|--|
| 770  |     |      |      |     |      | 775  |      |     |      |      |      | 780  |     |      |      |  |  |
| Phe  | Asn | Phe  | Ser  | Gln | Ile  | Leu  | Pro  | Asp | Pro  | Ser  | Lys  | Pro  | Ser | Lys  | Arg  |  |  |
| 785  |     |      |      |     | 790  |      |      |     |      | 795  |      |      |     |      | 800  |  |  |
| Ser  | Phe | Ile  | Glu  | Asp | Leu  | Leu  | Phe  | Asn | Lys  | Val  | Thr  | Leu  | Ala | Asp  | Ala  |  |  |
|      |     |      |      | 805 |      |      |      |     | 810  |      |      |      |     | 815  |      |  |  |
| Gly  | Phe | Ile  | Lys  | Gln | Tyr  | Gly  | Asp  | Cys | Leu  | Gly  | Asp  | Ile  | Ala | Ala  | Arg  |  |  |
|      |     |      | 820  |     |      |      |      | 825 |      |      |      |      | 830 |      |      |  |  |
| Asp  | Leu | Ile  | Cys  | Ala | Gln  | Lys  | Phe  | Asn | Gly  | Leu  | Thr  | Val  | Leu | Pro  | Pro  |  |  |
|      |     | 835  |      |     |      |      | 840  |     |      |      |      | 845  |     |      |      |  |  |
| Leu  | Leu | Thr  | Asp  | Glu | Met  | Ile  | Ala  | Gln | Tyr  | Thr  | Ser  | Ala  | Leu | Leu  | Ala  |  |  |
|      |     | 850  |      |     |      | 855  |      |     |      |      | 860  |      |     |      |      |  |  |
| Gly  | Thr | Ile  | Thr  | Ser | Gly  | Trp  | Thr  | Phe | Gly  | Ala  | Gly  | Ala  | Ala | Leu  | Gln  |  |  |
| 865  |     |      |      |     | 870  |      |      |     |      | 875  |      |      |     |      | 880  |  |  |
| Ile  | Pro | Phe  | Ala  | Met | Gln  | Met  | Ala  | Tyr | Arg  | Phe  | Asn  | Gly  | Ile | Gly  | Val  |  |  |
|      |     |      |      | 885 |      |      |      |     | 890  |      |      |      |     | 895  |      |  |  |
| Thr  | Gln | Asn  | Val  | Leu | Tyr  | Glu  | Asn  | Gln | Lys  | Leu  | Ile  | Ala  | Asn | Gln  | Phe  |  |  |
|      |     | 900  |      |     |      |      | 905  |     |      |      |      |      | 910 |      |      |  |  |
| Asn  | Ser | Ala  | Ile  | Gly | Lys  | Ile  | Gln  | Asp | Ser  | Leu  | Ser  | Ser  | Thr | Ala  | Ser  |  |  |
|      |     | 915  |      |     |      |      | 920  |     |      |      |      | 925  |     |      |      |  |  |
| Ala  | Leu | Gly  | Lys  | Leu | Gln  | Asp  | Val  | Val | Asn  | Gln  | Asn  | Ala  | Gln | Ala  | Leu  |  |  |
|      |     | 930  |      |     |      | 935  |      |     |      |      | 940  |      |     |      |      |  |  |
| Asn  | Thr | Leu  | Val  | Lys | Gln  | Leu  | Ser  | Ser | Asn  | Phe  | Gly  | Ala  | Ile | Ser  | Ser  |  |  |
| 945  |     |      |      |     | 950  |      |      |     |      | 955  |      |      |     |      | 960  |  |  |
| Val  | Leu | Asn  | Asp  | Ile | Leu  | Ser  | Arg  | Leu | Asp  | Lys  | Val  | Glu  | Ala | Glu  | Val  |  |  |
|      |     |      | 965  |     |      |      |      |     | 970  |      |      |      |     | 975  |      |  |  |
| Gln  | Ile | Asp  | Arg  | Leu | Ile  | Thr  | Gly  | Arg | Leu  | Gln  | Ser  | Leu  | Gln | Thr  | Tyr  |  |  |
|      |     | 980  |      |     |      |      | 985  |     |      |      |      |      | 990 |      |      |  |  |
| Val  | Thr | Gln  | Gln  | Leu | Ile  | Arg  | Ala  | Ala | Glu  | Ile  | Arg  | Ala  | Ser | Ala  | Asn  |  |  |
|      |     | 995  |      |     |      |      | 1000 |     |      |      |      | 1005 |     |      |      |  |  |
| Leu  | Ala | Ala  | Thr  | Lys | Met  | Ser  | Glu  | Cys | Val  | Leu  | Gly  | Gln  | Ser | Lys  | Arg  |  |  |
|      |     | 1010 |      |     |      | 1015 |      |     |      |      | 1020 |      |     |      |      |  |  |
| Val  | Asp | Phe  | Cys  | Gly | Lys  | Gly  | Tyr  | His | Leu  | Met  | Ser  | Phe  | Pro | Gln  | Ser  |  |  |
| 1025 |     |      |      |     | 1030 |      |      |     |      | 1035 |      |      |     |      | 1040 |  |  |
| Ala  | Pro | His  | Gly  | Val | Val  | Phe  | Leu  | His | Val  | Thr  | Tyr  | Val  | Pro | Ala  | Gln  |  |  |
|      |     |      | 1045 |     |      |      |      |     | 1050 |      |      |      |     | 1055 |      |  |  |
| Glu  | Lys | Asn  | Phe  | Thr | Thr  | Ala  | Pro  | Ala | Ile  | Cys  | His  | Asp  | Gly | Lys  | Ala  |  |  |
|      |     | 1060 |      |     |      |      | 1065 |     |      |      |      | 1070 |     |      |      |  |  |
| His  | Phe | Pro  | Arg  | Glu | Gly  | Val  | Phe  | Val | Ser  | Asn  | Gly  | Thr  | His | Trp  | Phe  |  |  |
|      |     | 1075 |      |     |      |      | 1080 |     |      |      | 1085 |      |     |      |      |  |  |
| Val  | Thr | Gln  | Arg  | Asn | Phe  | Tyr  | Glu  | Pro | Gln  | Ile  | Ile  | Thr  | Thr | Asp  | Asn  |  |  |
|      |     | 1090 |      |     |      | 1095 |      |     |      |      | 1100 |      |     |      |      |  |  |
| Thr  | Phe | Val  | Ser  | Gly | Asn  | Cys  | Asp  | Val | Val  | Ile  | Gly  | Ile  | Val | Asn  | Asn  |  |  |
| 1105 |     |      |      |     | 1110 |      |      |     |      | 1115 |      |      |     |      | 1120 |  |  |
| Thr  | Val | Tyr  | Asp  | Pro | Leu  | Gln  | Pro  | Glu | Leu  | Asp  | Ser  | Phe  | Lys | Glu  | Glu  |  |  |
|      |     |      | 1125 |     |      |      |      |     | 1130 |      |      |      |     | 1135 |      |  |  |
| Leu  | Asp | Lys  | Tyr  | Phe | Lys  | Asn  | His  | Thr | Ser  | Pro  | Asp  | Val  | Asp | Leu  | Gly  |  |  |
|      |     | 1140 |      |     |      |      | 1145 |     |      |      |      | 1150 |     |      |      |  |  |
| Asp  | Ile | Ser  | Gly  | Ile | Asn  | Ala  | Ser  | Val | Val  | Asn  | Ile  | Gln  | Lys | Glu  | Ile  |  |  |
|      |     | 1155 |      |     |      | 1160 |      |     |      |      | 1165 |      |     |      |      |  |  |
| Asp  | Arg | Leu  | Asn  | Glu | Val  | Ala  | Lys  | Asn | Leu  | Asn  | Glu  | Ser  | Leu | Ile  | Asp  |  |  |
|      |     | 1170 |      |     |      | 1175 |      |     |      |      | 1180 |      |     |      |      |  |  |
| Leu  | Gln | Glu  | Leu  | Gly | Lys  | Tyr  | Glu  | Gln | Tyr  | Ile  | Lys  | Trp  | Pro | Ala  | His  |  |  |
| 1185 |     |      |      |     | 1190 |      |      |     |      | 1195 |      |      |     |      | 1200 |  |  |
| His  | His | His  | His  | His | His  | His  | His  | His | His  |      |      |      |     |      |      |  |  |

1205

<210> 45  
 <211> 462  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Target domain of spike protein

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro | Pro |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ser | Arg | Asp | Glu | Leu | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | Leu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |
| Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | Leu | His |
|     |     | 435 |     |     |     |     | 440 |     |     |     | 445 |     |     |     |     |
| Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |     |     |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |

<210> 46

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> His-tag

<400> 46

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | His | His | His | His | His | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

<210> 47

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Human serum albumin binding domain

<400> 47

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | His | Glu | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |

<210> 48

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Human serum albumin binding domain

<400> 48

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

<210> 49

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Human serum albumin binding domain

<400> 49

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

Ala Gly His Glu Asp Ile Ala Glu Val Leu Gln Lys Ala Ala  
115 120 125

<210> 50  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Consensus sequence

<220>  
<221> VARIANT  
<222> 2,3,5,12,13,14,16,17,18,21,25,26,33  
<223> x" denotes any amino acid

<400> 50  
Asp Xaa Xaa Gly Xaa Thr Pro Leu His Leu Ala Xaa Xaa Xaa Gly Xaa  
1 5 10 15  
Xaa Xaa Leu Val Xaa Val Leu Leu Xaa Xaa Gly Ala Asp Val Asn Ala  
20 25 30  
Xaa

<210> 51  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Consensus sequence

<220>  
<221> VARIANT  
<222> 2,3,5,13,14,26,33  
<223> x" denotes any amino acid  
x" in position 26 is selected from the group consisting of  
asparagine, histidine, or tyrosine

<400> 51  
Asp Xaa Xaa Gly Xaa Thr Pro Leu His Leu Ala Ala Xaa Xaa Gly His  
1 5 10 15  
Leu Glu Ile Val Glu Val Leu Leu Lys Xaa Gly Ala Asp Val Asn Ala  
20 25 30  
Xaa

<210> 52  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>

<223> PT-rich linker

<400> 52

Gly Ser Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr  
1 5 10 15  
Pro Thr Pro Thr Pro Thr Gly Ser  
20

<210> 53

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> PT-rich linker

<400> 53

Gly Ser Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Thr  
1 5 10 15  
Pro Thr Pro Thr Pro Thr  
20

<210> 54

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Consensus GS linker

<220>

<221> VARIANT

<222> 1..5

<223> [Gly-Gly-Gly-Gly-Ser]<sub>n</sub>, wherein n is 1, 2, 3, 4, 5, or 6

<400> 54

Gly Gly Gly Gly Ser  
1 5

<210> 55

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> N-cap

<400> 55

Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly Gln

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     | 5   |     | 10  |     | 15  |     |     |     |     |     |     |     |     |     |
| Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |

<210> 56  
 <211> 32  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> N-cap

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 56 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly      | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln |
| 1        |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |     |
| Leu      | Asp | Glu | Val | Arg | Ile | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|          |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |

<210> 57  
 <211> 32  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> N-cap

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 57 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly      | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln |
| 1        |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |     |
| Leu      | Asp | Glu | Val | Arg | Ile | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|          |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |

<210> 58  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> C-cap

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 58 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln      | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly |
| 1        |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |     |
| His      | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |     |     |
|          |     | 20  |     |     |     |     | 25  |     |     |     |     |     |     |     |     |

<210> 59  
 <211> 977  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Target domain of spike protein

<400> 59  
 Gln Ser Thr Ile Glu Glu Gln Ala Lys Thr Phe Leu Asp Lys Phe Asn  
 1 5 10 15  
 His Glu Ala Glu Asp Leu Phe Tyr Gln Ser Ser Leu Ala Ser Trp Asn  
 20 25 30  
 Tyr Asn Thr Asn Ile Thr Glu Glu Asn Val Gln Asn Met Asn Asn Ala  
 35 40 45  
 Gly Asp Lys Trp Ser Ala Phe Leu Lys Glu Gln Ser Thr Leu Ala Gln  
 50 55 60  
 Met Tyr Pro Leu Gln Glu Ile Gln Asn Leu Thr Val Lys Leu Gln Leu  
 65 70 75 80  
 Gln Ala Leu Gln Gln Asn Gly Ser Ser Val Leu Ser Glu Asp Lys Ser  
 85 90 95  
 Lys Arg Leu Asn Thr Ile Leu Asn Thr Met Ser Thr Ile Tyr Ser Thr  
 100 105 110  
 Gly Lys Val Cys Asn Pro Asp Asn Pro Gln Glu Cys Leu Leu Leu Glu  
 115 120 125  
 Pro Gly Leu Asn Glu Ile Met Ala Asn Ser Leu Asp Tyr Asn Glu Arg  
 130 135 140  
 Leu Trp Ala Trp Glu Ser Trp Arg Ser Glu Val Gly Lys Gln Leu Arg  
 145 150 155 160  
 Pro Leu Tyr Glu Glu Tyr Val Val Leu Lys Asn Glu Met Ala Arg Ala  
 165 170 175  
 Asn His Tyr Glu Asp Tyr Gly Asp Tyr Trp Arg Gly Asp Tyr Glu Val  
 180 185 190  
 Asn Gly Val Asp Gly Tyr Asp Tyr Ser Arg Gly Gln Leu Ile Glu Asp  
 195 200 205  
 Val Glu His Thr Phe Glu Glu Ile Lys Pro Leu Tyr Glu His Leu His  
 210 215 220  
 Ala Tyr Val Arg Ala Lys Leu Met Asn Ala Tyr Pro Ser Tyr Ile Ser  
 225 230 235 240  
 Pro Ile Gly Cys Leu Pro Ala His Leu Leu Gly Asp Met Trp Gly Arg  
 245 250 255  
 Phe Trp Thr Asn Leu Tyr Ser Leu Thr Val Pro Phe Gly Gln Lys Pro  
 260 265 270  
 Asn Ile Asp Val Thr Asp Ala Met Val Asp Gln Ala Trp Asp Ala Gln  
 275 280 285  
 Arg Ile Phe Lys Glu Ala Glu Lys Phe Phe Val Ser Val Gly Leu Pro  
 290 295 300  
 Asn Met Thr Gln Gly Phe Trp Glu Asn Ser Met Leu Thr Asp Pro Gly  
 305 310 315 320  
 Asn Val Gln Lys Ala Val Cys His Pro Thr Ala Trp Asp Leu Gly Lys  
 325 330 335  
 Gly Asp Phe Arg Ile Leu Met Cys Thr Lys Val Thr Met Asp Asp Phe

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|                                                                 |     |     |
|-----------------------------------------------------------------|-----|-----|
| 770                                                             | 775 | 780 |
| Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His |     |     |
| 785                                                             | 790 | 795 |
| Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg |     |     |
|                                                                 | 805 | 810 |
| Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys |     |     |
|                                                                 | 820 | 825 |
| Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu |     |     |
|                                                                 | 835 | 840 |
| Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr |     |     |
|                                                                 | 850 | 855 |
| Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu |     |     |
| 865                                                             | 870 | 875 |
| Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp |     |     |
|                                                                 | 885 | 890 |
| Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val |     |     |
|                                                                 | 900 | 905 |
| Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp |     |     |
|                                                                 | 915 | 920 |
| Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His |     |     |
|                                                                 | 930 | 935 |
| Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro |     |     |
| 945                                                             | 950 | 955 |
| Gly Lys Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His |     |     |
|                                                                 | 965 | 970 |
|                                                                 |     | 975 |
| Glu                                                             |     |     |

<210> 60

<211> 756

<212> PRT

<213> Artificial Sequence

<220>

<223> Target domain of spike protein

<400> 60

|                                                                 |     |
|-----------------------------------------------------------------|-----|
| Gln Ser Thr Ile Glu Glu Gln Ala Lys Thr Phe Leu Asp Lys Phe Asn |     |
| 1                                                               | 5   |
| His Glu Ala Glu Asp Leu Phe Tyr Gln Ser Ser Leu Ala Ser Trp Asn |     |
|                                                                 | 20  |
| Tyr Asn Thr Asn Ile Thr Glu Glu Asn Val Gln Asn Met Asn Asn Ala |     |
|                                                                 | 35  |
| Gly Asp Lys Trp Ser Ala Phe Leu Lys Glu Gln Ser Thr Leu Ala Gln |     |
|                                                                 | 50  |
| Met Tyr Pro Leu Gln Glu Ile Gln Asn Leu Thr Val Lys Leu Gln Leu |     |
| 65                                                              | 70  |
| Gln Ala Leu Gln Gln Asn Gly Ser Ser Val Leu Ser Glu Asp Lys Ser |     |
|                                                                 | 85  |
| Lys Arg Leu Asn Thr Ile Leu Asn Thr Met Ser Thr Ile Tyr Ser Thr |     |
|                                                                 | 100 |
| Gly Lys Val Cys Asn Pro Asp Asn Pro Gln Glu Cys Leu Leu Glu     |     |
|                                                                 | 115 |
|                                                                 | 120 |
|                                                                 | 125 |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Met | Asn | Val | Arg | Pro | Leu | Leu | Asn | Tyr | Phe | Glu | Pro | Leu | Phe | Thr |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Trp | Leu | Lys | Asp | Gln | Asn | Lys | Asn | Ser | Phe | Val | Gly | Trp | Ser | Thr | Asp |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Trp | Ser | Pro | Tyr | Ala | Asp | Gln | Ser | Ile | Lys | Val | Arg | Ile | Ser | Leu | Lys |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ser | Ala | Leu | Gly | Asp | Lys | Ala | Tyr | Glu | Trp | Asn | Asp | Asn | Glu | Met | Tyr |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Leu | Phe | Arg | Ser | Ser | Val | Ala | Tyr | Ala | Met | Arg | Gln | Tyr | Phe | Leu | Lys |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Val | Lys | Asn | Gln | Met | Ile | Leu | Phe | Gly | Glu | Glu | Asp | Val | Arg | Val | Ala |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Asn | Leu | Lys | Pro | Arg | Ile | Ser | Phe | Asn | Phe | Phe | Val | Thr | Ala | Pro | Lys |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Asn | Val | Ser | Asp | Ile | Ile | Pro | Arg | Thr | Glu | Val | Glu | Lys | Ala | Ile | Arg |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Met | Ser | Arg | Ser | Arg | Ile | Asn | Asp | Ala | Phe | Arg | Leu | Asn | Asp | Asn | Ser |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Leu | Glu | Phe | Leu | Gly | Ile | Gln | Pro | Thr | Leu | Gly | Pro | Pro | Asn | Gln | Pro |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Pro | Val | Ser | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Ser | His | His | His | His | His |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| His | His | His | His | His | Gly | Leu | Asn | Asp | Ile | Phe | Glu | Ala | Gln | Lys | Ile |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Glu | Trp | His | Glu |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 755 |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 61

<211> 1209

<212> PRT

<213> Artificial Sequence

<220>

<223> Target domain of spike protein

<400> 61

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

|                                                                 |     |     |     |     |
|-----------------------------------------------------------------|-----|-----|-----|-----|
| 130                                                             |     | 135 |     | 140 |
| Tyr Ser Ser Ala Asn Asn Cys Thr Phe Glu Tyr Val Ser Gln Pro Phe |     |     |     |     |
| 145                                                             |     | 150 |     | 155 |
| Leu Met Asp Leu Glu Gly Lys Gln Gly Asn Phe Lys Asn Leu Arg Glu |     |     |     |     |
|                                                                 | 165 |     | 170 | 175 |
| Phe Val Phe Lys Asn Ile Asp Gly Tyr Phe Lys Ile Tyr Ser Lys His |     |     |     |     |
|                                                                 | 180 |     | 185 | 190 |
| Thr Pro Ile Asn Leu Val Arg Asp Leu Pro Gln Gly Phe Ser Ala Leu |     |     |     |     |
|                                                                 | 195 |     | 200 | 205 |
| Glu Pro Leu Val Asp Leu Pro Ile Gly Ile Asn Ile Thr Arg Phe Gln |     |     |     |     |
|                                                                 | 210 |     | 215 | 220 |
| Thr Leu Leu Ala Leu His Arg Ser Tyr Leu Thr Pro Gly Asp Ser Ser |     |     |     |     |
| 225                                                             |     | 230 |     | 235 |
| Ser Gly Trp Thr Ala Gly Ala Ala Ala Tyr Tyr Val Gly Tyr Leu Gln |     |     |     |     |
|                                                                 | 245 |     | 250 | 255 |
| Pro Arg Thr Phe Leu Leu Lys Tyr Asn Glu Asn Gly Thr Ile Thr Asp |     |     |     |     |
|                                                                 | 260 |     | 265 | 270 |
| Ala Val Asp Cys Ala Leu Asp Pro Leu Ser Glu Thr Lys Cys Thr Leu |     |     |     |     |
|                                                                 | 275 |     | 280 | 285 |
| Lys Ser Phe Thr Val Glu Lys Gly Ile Tyr Gln Thr Ser Asn Phe Arg |     |     |     |     |
|                                                                 | 290 |     | 295 | 300 |
| Val Gln Pro Thr Glu Ser Ile Val Arg Phe Pro Asn Ile Thr Asn Leu |     |     |     |     |
| 305                                                             |     | 310 |     | 315 |
| Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Arg Phe Ala Ser Val Tyr |     |     |     |     |
|                                                                 | 325 |     | 330 | 335 |
| Ala Trp Asn Arg Lys Arg Ile Ser Asn Cys Val Ala Asp Tyr Ser Val |     |     |     |     |
|                                                                 | 340 |     | 345 | 350 |
| Leu Tyr Asn Ser Ala Ser Phe Ser Thr Phe Lys Cys Tyr Gly Val Ser |     |     |     |     |
|                                                                 | 355 |     | 360 | 365 |
| Pro Thr Lys Leu Asn Asp Leu Cys Phe Thr Asn Val Tyr Ala Asp Ser |     |     |     |     |
|                                                                 | 370 |     | 375 | 380 |
| Phe Val Ile Arg Gly Asp Glu Val Arg Gln Ile Ala Pro Gly Gln Thr |     |     |     |     |
| 385                                                             |     | 390 |     | 395 |
| Gly Lys Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Thr Gly |     |     |     |     |
|                                                                 | 405 |     | 410 | 415 |
| Cys Val Ile Ala Trp Asn Ser Asn Asn Leu Asp Ser Lys Val Gly Gly |     |     |     |     |
|                                                                 | 420 |     | 425 | 430 |
| Asn Tyr Asn Tyr Leu Tyr Arg Leu Phe Arg Lys Ser Asn Leu Lys Pro |     |     |     |     |
|                                                                 | 435 |     | 440 | 445 |
| Phe Glu Arg Asp Ile Ser Thr Glu Ile Tyr Gln Ala Gly Ser Thr Pro |     |     |     |     |
|                                                                 | 450 |     | 455 | 460 |
| Cys Asn Gly Val Glu Gly Phe Asn Cys Tyr Phe Pro Leu Gln Ser Tyr |     |     |     |     |
| 465                                                             |     | 470 |     | 475 |
| Gly Phe Gln Pro Thr Asn Gly Val Gly Tyr Gln Pro Tyr Arg Val Val |     |     |     |     |
|                                                                 | 485 |     | 490 | 495 |
| Val Leu Ser Phe Glu Leu Leu His Ala Pro Ala Thr Val Cys Gly Pro |     |     |     |     |
|                                                                 | 500 |     | 505 | 510 |
| Lys Lys Ser Thr Asn Leu Val Lys Asn Lys Cys Val Asn Phe Asn Phe |     |     |     |     |
|                                                                 | 515 |     | 520 | 525 |
| Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Glu Ser Asn Lys Lys Phe |     |     |     |     |
|                                                                 | 530 |     | 535 | 540 |
| Leu Pro Phe Gln Gln Phe Gly Arg Asp Ile Ala Asp Thr Thr Asp Ala |     |     |     |     |
| 545                                                             |     | 550 |     | 555 |
| Val Arg Asp Pro Gln Thr Leu Glu Ile Leu Asp Ile Thr Pro Cys Ser |     |     |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Tyr | Asn | Tyr | Leu | Tyr | Arg | Leu | Phe | Arg | Lys | Ser | Asn | Leu | Lys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Pro | Phe | Glu | Arg | Asp | Ile | Ser | Thr | Glu | Ile | Tyr | Gln | Ala | Gly | Ser | Thr |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Pro | Cys | Asn | Gly | Val | Glu | Gly | Phe | Asn | Cys | Tyr | Phe | Pro | Leu | Gln | Ser |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Tyr | Gly | Phe | Gln | Pro | Thr | Asn | Gly | Val | Gly | Tyr | Gln | Pro | Tyr | Arg | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Val | Leu | Ser | Phe | Glu | Leu | Leu | His | Ala | Pro | Ala | Thr | Val | Cys | Gly |
|     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Pro | Lys | Lys | Ser | Thr | Asn | Leu | Val | Lys | Asn | Lys | Cys | Val | Asn | Phe | Gly |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Gly | Gly | Ser | Gly | Gly | Gly | Ser | His | His | His | His | His | His | His | His | His |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| His | Gly | Leu | Asn | Asp | Ile | Phe | Glu | Ala | Gln | Lys | Ile | Glu | Trp | His | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |

<210> 63

<211> 908

<212> PRT

<213> Artificial Sequence

<220>

<223> Target domain of spike protein

<400> 63

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

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     | 640 |
| Val | Asn | Asn | Ser | Tyr | Glu | Cys | Asp | Ile | Pro | Ile | Gly | Ala | Gly | Ile |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |
| Ala | Ser | Tyr | Gln | Thr | Gln | Thr | Asn | Ser | Pro | Arg | Arg | Ala | Arg | Ala |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |
| Asp | Asp | Asp | Lys | Glu | Pro | Lys | Ser | Ser | Asp | Lys | Thr | His | Thr | Cys |
|     |     | 675 |     |     |     |     | 680 |     |     |     | 685 |     |     | Pro |
| Pro | Cys | Pro | Ala | Pro | Glu | Leu | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe |
|     | 690 |     |     |     |     | 695 |     |     | 700 |     |     |     |     |     |
| Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu |
| 705 |     |     |     |     | 710 |     |     |     | 715 |     |     |     |     | 720 |
| Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro | Glu | Val | Lys |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |
| Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys | Thr | Lys |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |
| Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser | Val | Leu |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |
| Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys |
|     | 770 |     |     |     |     | 775 |     |     |     | 780 |     |     |     | Val |
| Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     | 800 |
| Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro | Pro | Ser |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |
| Asp | Glu | Leu | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | Leu | Val | Lys |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     | 830 |     | Gly |
| Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln |
|     |     | 835 |     |     |     | 840 |     |     |     |     | 845 |     |     | Pro |
| Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly |
|     | 850 |     |     |     |     | 855 |     |     |     | 860 |     |     |     | Ser |
| Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     | 880 |
| Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn |
|     |     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |
| Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |     |     |     |
|     |     | 900 |     |     |     |     |     | 905 |     |     |     |     |     |     |

<210> 64

<211> 681

<212> PRT

<213> Artificial Sequence

<220>

<223> Target domain of spike protein

<400> 64

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asn | Pro | Val | Leu | Pro | Phe | Asn | Asp | Gly | Val | Tyr | Phe | Ala | Ser | Thr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Glu | Lys | Ser | Asn | Ile | Ile | Arg | Gly | Trp | Ile | Phe | Gly | Thr | Thr | Leu | Asp |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Lys | Thr | Gln | Ser | Leu | Leu | Ile | Val | Asn | Asn | Ala | Thr | Asn | Val | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ile | Lys | Val | Cys | Glu | Phe | Gln | Phe | Cys | Asn | Asp | Pro | Phe | Leu | Gly | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Tyr | Tyr | His | Lys | Asn | Asn | Lys | Ser | Trp | Met | Glu | Ser | Glu | Phe | Arg | Val |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Tyr | Ser | Ser | Ala | Asn | Asn | Cys | Thr | Phe | Glu | Tyr | Val | Ser | Gln | Pro | Phe |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Leu | Met | Asp | Leu | Glu | Gly | Lys | Gln | Gly | Asn | Phe | Lys | Asn | Leu | Arg | Glu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Phe | Val | Phe | Lys | Asn | Ile | Asp | Gly | Tyr | Phe | Lys | Ile | Tyr | Ser | Lys | His |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Thr | Pro | Ile | Asn | Leu | Val | Arg | Asp | Leu | Pro | Gln | Gly | Phe | Ser | Ala | Leu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Glu | Pro | Leu | Val | Asp | Leu | Pro | Ile | Gly | Ile | Asn | Ile | Thr | Arg | Phe | Gln |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Leu | Leu | Ala | Leu | His | Arg | Ser | Tyr | Leu | Thr | Pro | Gly | Asp | Ser | Ser |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ser | Gly | Trp | Thr | Ala | Gly | Ala | Ala | Ala | Tyr | Tyr | Val | Gly | Tyr | Leu | Gln |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Pro | Arg | Thr | Phe | Leu | Leu | Lys | Tyr | Asn | Glu | Asn | Gly | Thr | Ile | Thr | Asp |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Val | Asp | Cys | Ala | Leu | Asp | Pro | Leu | Ser | Glu | Thr | Lys | Cys | Thr | Leu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Lys | Ser | Phe | Thr | Val | Glu | Lys | Gly | Ile | Tyr | Gln | Thr | Ser | Asn | Phe | Arg |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Val | Gln | Pro | Thr | Glu | Ser | Ile | Val | Arg | Phe | Pro | Asn | Ile | Thr | Asn | Leu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Cys | Pro | Phe | Gly | Glu | Val | Phe | Asn | Ala | Thr | Arg | Phe | Ala | Ser | Val | Tyr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Trp | Asn | Arg | Lys | Arg | Ile | Ser | Asn | Cys | Val | Ala | Asp | Tyr | Ser | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Leu | Tyr | Asn | Ser | Ala | Ser | Phe | Ser | Thr | Phe | Lys | Cys | Tyr | Gly | Val | Ser |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Pro | Thr | Lys | Leu | Asn | Asp | Leu | Cys | Phe | Thr | Asn | Val | Tyr | Ala | Asp | Ser |
|     | 370 |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |     |
| Phe | Val | Ile | Arg | Gly | Asp | Glu | Val | Arg | Gln | Ile | Ala | Pro | Gly | Gln | Thr |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gly | Lys | Ile | Ala | Asp | Tyr | Asn | Tyr | Lys | Leu | Pro | Asp | Asp | Phe | Thr | Gly |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Cys | Val | Ile | Ala | Trp | Asn | Ser | Asn | Asn | Leu | Asp | Ser | Lys | Val | Gly | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asn | Tyr | Asn | Tyr | Leu | Tyr | Arg | Leu | Phe | Arg | Lys | Ser | Asn | Leu | Lys | Pro |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Phe | Glu | Arg | Asp | Ile | Ser | Thr | Glu | Ile | Tyr | Gln | Ala | Gly | Ser | Thr | Pro |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Cys | Asn | Gly | Val | Glu | Gly | Phe | Asn | Cys | Tyr | Phe | Pro | Leu | Gln | Ser | Tyr |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Gly | Phe | Gln | Pro | Thr | Asn | Gly | Val | Gly | Tyr | Gln | Pro | Tyr | Arg | Val | Val |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ser | Phe | Glu | Leu | Leu | His | Ala | Pro | Ala | Thr | Val | Cys | Gly | Pro |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Lys | Lys | Ser | Thr | Asn | Leu | Val | Lys | Asn | Lys | Cys | Val | Asn | Phe | Asn | Phe |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Asn | Gly | Leu | Thr | Gly | Thr | Gly | Val | Leu | Thr | Glu | Ser | Asn | Lys | Lys | Phe |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Leu | Pro | Phe | Gln | Gln | Phe | Gly | Arg | Asp | Ile | Ala | Asp | Thr | Thr | Asp | Ala |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Val | Arg | Asp | Pro | Gln | Thr | Leu | Glu | Ile | Leu | Asp | Ile | Thr | Pro | Cys | Ser |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     |     | 575 |     |
| Phe | Gly | Gly | Val | Ser | Val | Ile | Thr | Pro | Gly | Thr | Asn | Thr | Ser | Asn | Gln |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Val | Ala | Val | Leu | Tyr | Gln | Asp | Val | Asn | Cys | Thr | Glu | Val | Pro | Val | Ala |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ile | His | Ala | Asp | Gln | Leu | Thr | Pro | Thr | Trp | Arg | Val | Tyr | Ser | Thr | Gly |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Ser | Asn | Val | Phe | Gln | Thr | Arg | Ala | Gly | Cys | Leu | Ile | Gly | Ala | Glu | His |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Val | Asn | Asn | Ser | Tyr | Glu | Cys | Asp | Ile | Pro | Ile | Gly | Ala | Gly | Ile | Cys |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Ser | Tyr | Gln | Thr | Gln | Thr | Asn | Ser | Pro | Arg | Arg | Ala | Arg | Ala | His |
|     |     |     | 660 |     |     |     | 665 |     |     |     |     |     | 670 |     |     |
| His | His | His | His | His | His | His | His | His |     |     |     |     |     |     |     |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     |     |     |     |     |

<210> 65

<211> 730

<212> PRT

<213> Artificial Sequence

<220>

<223> Target domain of spike protein

<400> 65

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     | 160 |
| Pro | Phe | Leu | Met | Asp | Leu | Glu | Gly | Lys | Gln | Gly | Asn | Phe | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     | 175 |
| Arg | Glu | Phe | Val | Phe | Lys | Asn | Ile | Asp | Gly | Tyr | Phe | Lys | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     | 190 |     |
| Lys | His | Thr | Pro | Ile | Asn | Leu | Val | Arg | Asp | Leu | Pro | Gln | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     | 205 |     |     |
| Ala | Leu | Glu | Pro | Leu | Val | Asp | Leu | Pro | Ile | Gly | Ile | Asn | Arg |
|     | 210 |     |     |     |     | 215 |     |     |     | 220 |     |     |     |
| Phe | Gln | Thr | Leu | Leu | Ala | Leu | His | Arg | Ser | Tyr | Leu | Thr | Asp |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     | 240 |
| Ser | Ser | Ser | Gly | Trp | Thr | Ala | Gly | Ala | Ala | Ala | Tyr | Tyr | Tyr |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Leu | Gln | Pro | Arg | Thr | Phe | Leu | Leu | Lys | Tyr | Asn | Glu | Asn | Ile |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     | 270 |     |
| Thr | Asp | Ala | Val | Asp | Cys | Ala | Leu | Asp | Pro | Leu | Ser | Glu | Cys |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |
| Thr | Leu | Lys | Ser | Phe | Thr | Val | Glu | Lys | Gly | Ile | Tyr | Gln | Asn |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |
| Phe | Arg | Val | Gln | Pro | Thr | Glu | Ser | Ile | Val | Arg | Phe | Pro | Thr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     | 320 |
| Asn | Leu | Cys | Pro | Phe | Gly | Glu | Val | Phe | Asn | Ala | Thr | Arg | Ser |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     | 335 |
| Val | Tyr | Ala | Trp | Asn | Arg | Lys | Arg | Ile | Ser | Asn | Cys | Val | Tyr |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |
| Ser | Val | Leu | Tyr | Asn | Ser | Ala | Ser | Phe | Ser | Thr | Phe | Lys | Gly |
|     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |
| Val | Ser | Pro | Thr | Lys | Leu | Asn | Asp | Leu | Cys | Phe | Thr | Asn | Ala |
|     | 370 |     |     |     |     | 375 |     |     |     | 380 |     |     |     |
| Asp | Ser | Phe | Val | Ile | Arg | Gly | Asp | Glu | Val | Arg | Gln | Ile | Gly |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     | 400 |
| Gln | Thr | Gly | Lys | Ile | Ala | Asp | Tyr | Asn | Tyr | Lys | Leu | Pro | Phe |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |
| Thr | Gly | Cys | Val | Ile | Ala | Trp | Asn | Ser | Asn | Asn | Leu | Asp | Val |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |
| Gly | Gly | Asn | Tyr | Asn | Tyr | Leu | Tyr | Arg | Leu | Phe | Arg | Lys | Leu |
|     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |
| Lys | Pro | Phe | Glu | Arg | Asp | Ile | Ser | Thr | Glu | Ile | Tyr | Gln | Ser |
|     | 450 |     |     |     | 455 |     |     |     |     |     | 460 |     |     |
| Thr | Pro | Cys | Asn | Gly | Val | Glu | Gly | Phe | Asn | Cys | Tyr | Phe | Gln |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     | 480 |
| Ser | Tyr | Gly | Phe | Gln | Pro | Thr | Asn | Gly | Val | Gly | Tyr | Gln | Arg |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |
| Val | Val | Val | Leu | Ser | Phe | Glu | Leu | Leu | His | Ala | Pro | Ala | Cys |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |
| Gly | Pro | Lys | Lys | Ser | Thr | Asn | Leu | Val | Lys | Asn | Lys | Cys | Phe |
|     | 515 |     |     |     |     |     | 520 |     |     |     | 525 |     |     |
| Asn | Phe | Asn | Gly | Leu | Thr | Gly | Thr | Gly | Val | Leu | Thr | Glu | Lys |
|     | 530 |     |     |     |     | 535 |     |     |     | 540 |     |     |     |
| Lys | Phe | Leu | Pro | Phe | Gln | Gln | Phe | Gly | Arg | Asp | Ile | Ala | Thr |
| 545 |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |
| Asp | Ala | Val | Arg | Asp | Pro | Gln | Thr | Leu | Glu | Ile | Leu | Asp | Pro |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     | 575 |
| Cys | Ser | Phe | Gly | Gly | Val | Ser | Val | Ile | Thr | Pro | Gly | Thr | Ser |



Cys Gly Pro Gly Gly Gly Ser Trp Ser His Pro Gln Phe Glu Lys Gly  
           195                          200                          205  
 Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Trp Ser His Pro Gln  
           210                          215                          220  
 Phe Glu Lys  
 225

<210> 67  
 <211> 539  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Target domain of spike protein

<400> 67  
 Ser Val Ala Ser Gln Ser Ile Ile Ala Tyr Thr Met Ser Leu Gly Ala  
 1                          5                          10                          15  
 Glu Asn Ser Val Ala Tyr Ser Asn Asn Ser Ile Ala Ile Pro Thr Asn  
           20                          25                          30  
 Phe Thr Ile Ser Val Thr Thr Glu Ile Leu Pro Val Ser Met Thr Lys  
           35                          40                          45  
 Thr Ser Val Asp Cys Thr Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys  
           50                          55                          60  
 Ser Asn Leu Leu Leu Gln Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg  
 65                          70                          75                          80  
 Ala Leu Thr Gly Ile Ala Val Glu Gln Asp Lys Asn Thr Gln Glu Val  
           85                          90                          95  
 Phe Ala Gln Val Lys Gln Ile Tyr Lys Thr Pro Pro Ile Lys Asp Phe  
           100                          105                          110  
 Gly Gly Phe Asn Phe Ser Gln Ile Leu Pro Asp Pro Ser Lys Pro Ser  
           115                          120                          125  
 Lys Arg Ser Phe Ile Glu Asp Leu Leu Phe Asn Lys Val Thr Leu Ala  
           130                          135                          140  
 Asp Ala Gly Phe Ile Lys Gln Tyr Gly Asp Cys Leu Gly Asp Ile Ala  
 145                          150                          155                          160  
 Ala Arg Asp Leu Ile Cys Ala Gln Lys Phe Asn Gly Leu Thr Val Leu  
           165                          170                          175  
 Pro Pro Leu Leu Thr Asp Glu Met Ile Ala Gln Tyr Thr Ser Ala Leu  
           180                          185                          190  
 Leu Ala Gly Thr Ile Thr Ser Gly Trp Thr Phe Gly Ala Gly Ala Ala  
           195                          200                          205  
 Leu Gln Ile Pro Phe Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile  
           210                          215                          220  
 Gly Val Thr Gln Asn Val Leu Tyr Glu Asn Gln Lys Leu Ile Ala Asn  
 225                          230                          235                          240  
 Gln Phe Asn Ser Ala Ile Gly Lys Ile Gln Asp Ser Leu Ser Ser Thr  
           245                          250                          255  
 Ala Ser Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln  
           260                          265                          270  
 Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile  
           275                          280                          285  
 Ser Ser Val Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala

|                         |                     |                     |     |     |
|-------------------------|---------------------|---------------------|-----|-----|
| 290                     |                     | 295                 |     | 300 |
| Glu Val Gln Ile Asp Arg | Leu Ile Thr Gly Arg | Leu Gln Ser Leu Gln |     |     |
| 305                     | 310                 | 315                 | 320 |     |
| Thr Tyr Val Thr Gln Gln | Leu Ile Arg Ala Ala | Glu Ile Arg Ala Ser |     |     |
|                         | 325                 | 330                 | 335 |     |
| Ala Asn Leu Ala Ala Thr | Lys Met Ser Glu Cys | Val Leu Gly Gln Ser |     |     |
|                         | 340                 | 345                 | 350 |     |
| Lys Arg Val Asp Phe Cys | Gly Lys Gly Tyr His | Leu Met Ser Phe Pro |     |     |
|                         | 355                 | 360                 | 365 |     |
| Gln Ser Ala Pro His Gly | Val Val Phe Leu His | Val Thr Tyr Val Pro |     |     |
|                         | 370                 | 375                 | 380 |     |
| Ala Gln Glu Lys Asn Phe | Thr Thr Ala Pro Ala | Ile Cys His Asp Gly |     |     |
| 385                     | 390                 | 395                 | 400 |     |
| Lys Ala His Phe Pro Arg | Glu Gly Val Phe Val | Ser Asn Gly Thr His |     |     |
|                         | 405                 | 410                 | 415 |     |
| Trp Phe Val Thr Gln Arg | Asn Phe Tyr Glu Pro | Gln Ile Ile Thr Thr |     |     |
|                         | 420                 | 425                 | 430 |     |
| Asp Asn Thr Phe Val Ser | Gly Asn Cys Asp Val | Val Ile Gly Ile Val |     |     |
|                         | 435                 | 440                 | 445 |     |
| Asn Asn Thr Val Tyr Asp | Pro Leu Gln Pro Glu | Leu Asp Ser Phe Lys |     |     |
|                         | 450                 | 455                 | 460 |     |
| Glu Glu Leu Asp Lys Tyr | Phe Lys Asn His Thr | Ser Pro Asp Val Asp |     |     |
| 465                     | 470                 | 475                 | 480 |     |
| Leu Gly Asp Ile Ser Gly | Ile Asn Ala Ser Val | Val Asn Ile Gln Lys |     |     |
|                         | 485                 | 490                 | 495 |     |
| Glu Ile Asp Arg Leu Asn | Glu Val Ala Lys Asn | Leu Asn Glu Ser Leu |     |     |
|                         | 500                 | 505                 | 510 |     |
| Ile Asp Leu Gln Glu Leu | Gly Lys Tyr Glu Gln | Tyr Ile Lys Trp Pro |     |     |
|                         | 515                 | 520                 | 525 |     |
| Ala His His His His His | His His His His His |                     |     |     |
| 530                     | 535                 |                     |     |     |

<210> 68

<211> 521

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 68

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Ala | Lys | Asp | Leu | Ala | Gly | Ala | Thr | Pro | Leu | His | Val | Ala | Ala | Leu |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |
| Tyr | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |  |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |
| Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |
| Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |
| Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Gln | Ala |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     |     | 190 |     |  |
| Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |  |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Arg | Glu | Gly | Lys | Thr | Pro | Leu | His | Val |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Ala | Ala | Gln | Glu | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly | Arg | Thr | Pro | Leu | His |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Leu | Ala | Ala | Trp | Ile | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |  |
| Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | Thr | Pro | Leu |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | Lys | Thr | Pro |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     |     | 350 |     |  |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Lys | Leu | Leu | Gln | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Glu |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Glu | Gly | Ile |  |
| 385 |     |     |     |     | 390 |     |     |     | 395 |     |     |     |     |     | 400 |  |
| Thr | Pro | Leu | His | Val | Ala | Ala | His | Gln | Gly | His | Leu | Glu | Ile | Val | Glu |  |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     |     | 415 |     |  |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Trp | Gly |  |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     |     | 430 |     |     |  |
| Arg | Thr | Pro | Leu | His | Leu | Ala | Ala | Trp | Arg | Gly | His | Leu | Glu | Ile | Val |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | His | Ala |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |
| Gly | Ala | Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | Ser | Gly | His | Leu | Glu | Ile |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |
| Ser | Gly | Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |     |     |     |     |     |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     |     |     |     |     |  |

<210> 69  
 <211> 455  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 69  
 Gly Ser Asp Leu Gly Lys Lys Leu Leu Gln Ala Ala Arg Ala Gly Gln  
 1 5 10 15  
 Leu Asp Glu Val Arg Glu Leu Leu Lys Ala Gly Ala Asp Val Asn Ala  
 20 25 30  
 Lys Asp Gln Glu Gly Ile Thr Pro Leu His Val Ala Ala His Gln Gly  
 35 40 45  
 His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val Asn  
 50 55 60  
 Ala Lys Asp Val Trp Gly Arg Thr Pro Leu His Leu Ala Ala Trp Arg  
 65 70 75 80  
 Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp Val  
 85 90 95  
 Asn Ala Lys Asp His Ala Gly Ala Thr Pro Leu His Ala Ala Leu  
 100 105 110  
 Ser Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala Gly Ala Asp  
 115 120 125  
 Val Asn Ala Gln Asp Lys Ser Gly Lys Thr Pro Ala Asp Leu Ala Ala  
 130 135 140  
 Arg Ala Gly His Gln Asp Ile Ala Glu Val Leu Gln Lys Ala Ala Gly  
 145 150 155 160  
 Ser Pro Thr Pro Thr Pro Thr Thr Pro Thr Pro Thr Pro Thr Pro  
 165 170 175  
 Thr Pro Thr Pro Thr Gly Ser Asp Leu Gly His Lys Leu Leu Leu Ala  
 180 185 190  
 Ala Gln Ala Gly Gln Asp Asp Glu Val Arg Ile Leu Leu Ala Ala Gly  
 195 200 205  
 Ala Asp Val Asn Ala Lys Asp Val Phe Gly Gln Thr Pro Leu His Val  
 210 215 220  
 Ala Ala Val Ala Gly His Leu Glu Ile Val Glu Val Leu Leu Lys Ala  
 225 230 235 240  
 Gly Ala Asp Val Asn Ala Lys Asp Ser Ile Gly Tyr Thr Pro Leu His  
 245 250 255  
 His Ala Ala Arg Val Gly His Leu Glu Ile Val Glu Val Leu Leu Lys  
 260 265 270  
 Ala Gly Ala Asp Val Asn Ala Gln Asp Trp Ile Gly Ile Thr Pro Ala  
 275 280 285  
 Asp Leu Ala Ala Phe Glu Gly His Glu Asp Ile Ala Glu Val Leu Gln  
 290 295 300  
 Lys Ala Ala Gly Ser Pro Thr Pro Thr Pro Thr Pro Thr Pro Thr  
 305 310 315 320  
 Pro Thr Thr Pro Thr Pro Thr Pro Thr Gly Ser Asp Leu Gly Gln Lys  
 325 330 335  
 Leu Leu His Ala Ala Gln Tyr Gly Gln Asp Asp Glu Val Arg Ile Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Leu | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Pro | Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Thr | Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | Glu | Ile | Val | Glu |  |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |  |  |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly |  |  |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |  |  |
| Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | Glu | Asp | Ile | Ala |  |  |
|     | 435 |     |     |     |     | 440 |     |     |     |     |     | 445 |     |     |     |  |  |
| Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |     |     |     |     |     |     |     |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     |     |     |     |     |     |  |  |

<210> 70

<211> 477

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding spike protein binding domain

<400> 70

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ggcagcgatt tgggtaaaaa gctgctgcag gccgcgagag cgggccagtt ggacgaggtg  | 60  |
| cgtgagctgt tgaaagcggg tgcagacgtt aatgctaaag accgcgaggg tatcactccg  | 120 |
| ttgcatctgg cggcacagca cggtcattctt gagatcgtag aagtcttggt gaaagctggt | 180 |
| gctgacgtca atgccaagga tgtttgggggt cgtactccac tgcattctgc ggcgtggcag | 240 |
| ggtcaccttg agattgtcga ggttttgctg aaagcgggcg ccgacgtcaa tgcgaaagat  | 300 |
| ctggcaggcg cgacctctt gcatgttgcg gcgctgtacg gtcacctgga aatcgttgaa   | 360 |
| gtcctcttga aggcgggtgc ggatgtaaac gcgcaggaca agagcggtaa aacgccggcc  | 420 |
| gatctggcag cacgcgccgg tcaccaagat atcgcagaag tgctgcaaaa ggctgcg     | 477 |

<210> 71

<211> 477

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding spike protein binding domain

<400> 71

|                                                                   |    |
|-------------------------------------------------------------------|----|
| ggtagcgacc tgggcaagaa actgctgcaa gccgcacgtg ccggtcagct ggacgaagtg | 60 |
|-------------------------------------------------------------------|----|

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| cgtgagttgt tgaaggctgg cgctgacgtg aacgcaaaag accgtgaggg taagacgccg   | 120 |
| ttacacgtgg cagcgcaaga aggccacctg gagattgttg aagtgtgct caaagctggc    | 180 |
| gcagacgtca acgctaaaga tgtgtgggggt cgcactccgc tgcattctggc cgcgtggatt | 240 |
| ggtcattttg aaattgtgga agttctgctc aaggccggcg ctgatgtcaa cgccaaagat   | 300 |
| gtgagcgggtg cgaccccgct gcacgcagcg gcgctgcacg gtcacttgga aatcgtggag  | 360 |
| gttctgttga acgccgggtgc tgatgttaac gcgcaagata aatcgggtaa gactccggcg  | 420 |
| gatctggcgg ctctgtgcggg tcaccaggat attgccgaag ttttgcagaa agccgct     | 477 |

<210> 72

<211> 477

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding spike protein binding domain

<400> 72

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ggtagcgact tgggtaagaa actgttgacg gcagcgcgcg cgggtcaact ggacgaggtt  | 60  |
| cgtgagcttt tgaaagccgg tgcggacgtt aacgcgaagg atcaagaagg cattacccca  | 120 |
| ctgcacgtgg cggcacatca gggctcatctg gagatcgttg aggttctgct gaaggccgga | 180 |
| gcggatgtca acgcgaaaga cgtttggggc cgtaccccat tgcacctggc ggcgtggcgc  | 240 |
| ggtcacctcg aaatcgtcga agtggtactg aaagctgggg cagatgtgaa cgccaaggac  | 300 |
| cacgcgggtg cgacgccgct gcatgcggca gcgctgagcg gccatctgga aattgtcgaa  | 360 |
| gtcctgctga aagccggcgc agatgttaat gccagagata aatccggtaa gacccggca   | 420 |
| gacctggcag cgcgtgcggg ccaccaagac attgccgagg ttctgcaaaa agccgcg     | 477 |

<210> 73

<211> 1563

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding multi-specific binding protein

<400> 73

|                                                                   |    |
|-------------------------------------------------------------------|----|
| ggcagcgatt tgggtaaaaa gctgctgcag gccgcgagag cgggccagtt ggacgaggtg | 60 |
|-------------------------------------------------------------------|----|

|                                                                    |      |
|--------------------------------------------------------------------|------|
| cgtgagctgt tgaagcgagg tgcagacgtt aatgctaaag accgcgaggg tatcactccg  | 120  |
| ttgcatctgg cggcacagca cggatcatctt gagatcgtag aagtcttggt gaaagctggt | 180  |
| gctgacgtca atgccaagga tgtttgggggt cgtactccac tgcattctgc ggcgtggcag | 240  |
| ggtcaccttg agattgtcga ggttttgctg aaagcgggcg ccgacgtcaa tgcgaaagat  | 300  |
| ctggcaggcg cgacccctct gcatgttgcg gcgctgtacg gtcacctgga aatcggtgaa  | 360  |
| gtcctcttga aggcgggtgc ggatgtaaag gcgcaggaca agagcggtaa aacgccggcc  | 420  |
| gatctggcag cacgcgccgg tcaccaagat atcgagaag tgctgcaaaa ggctgcgggt   | 480  |
| agcccaaccc caacgccgac cactcctacc cctaccccaa ccacccaac tccaactccg   | 540  |
| actggtagcg acctgggcaa gaaactgctg caagccgcac gtgccggtca gctggacgaa  | 600  |
| gtgcgtgagt tgttgaaggc tggcgctgac gtgaacgcaa aagaccgtga gggtaagacg  | 660  |
| ccgttacacg tggcagcgca agaaggccac ctggagattg ttgaagtgtt gctcaaagct  | 720  |
| ggcgagacg tcaacgctaa agatgtgtgg ggtcgactc cgctgcatct ggccgcgtgg    | 780  |
| attggtcatt tggaaattgt ggaagtctg ctcaaggccg gcgctgatgt caacgcaaaa   | 840  |
| gatgtgagcg gtgcgacccc gctgcacgca gcggcgctgc acggtcactt ggaaatcgtg  | 900  |
| gaggttctgt tgaacgccgg tgctgatgtt aacgcgcaag ataaatcggg taagactccg  | 960  |
| gcggatctgg cggctcgtgc gggtcaccag gatattgccg aagttttgca gaaagccgct  | 1020 |
| ggttctccta cgccgacccc gacgacgccg actccaaccc cgaccacgcc gacgcctacc  | 1080 |
| ccgaccggtg gcgacttggg taagaaactg ttgcaggcag cgcgcgcggg tcaactggac  | 1140 |
| gaggttcgtg agcttttgaa agccggtgcg gacgttaacg cgaaggatca agaaggcatt  | 1200 |
| acccactgc acgtggcggc acatcagggt catctggaga tcgttgaggt tctgctgaag   | 1260 |
| gccggagcgg atgtcaacgc gaaagacgtt tggggccgta cccattgca cctggcggcg   | 1320 |
| tggcgcggtc acctcgaaat cgtcgaagtg ttactgaaag ctggggcaga tgtgaacgcc  | 1380 |
| aaggaccacg cgggtgcgac gccgctgcat gcggcagcgc tgagcggcca tctggaatt   | 1440 |
| gtcgaagtcc tgctgaaagc cggcgagat gttaatgccc aggataaatc cggtaagacc   | 1500 |
| ccggcagacc tggcagcgcg tgcggggccac caagacattg ccgaggttct gcaaaaagcc | 1560 |
| gcg                                                                | 1563 |

<210> 74  
 <211> 2451  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Nucleic acid encoding multi-specific binding protein

<400> 74  
 ggatccgatc tgggcaaaaa gttgctggaa gcggcacgtg caggccagga cgatgaagtt 60  
 cgcgagctgt taaaagcagg cgcagatggt aatgcgaagg actatttcag ccacacgccg 120  
 ttgcatttgg cggcacgtaa cggccacctg aaaatcgtgg aagtgtgttt aaaggctggt 180  
 gccgatgtga atgccaaaga ttttgcgggt aaaaccccggt tacacttggc ggcgaacgag 240  
 ggtcatttag agatcgtcga ggtcctgctt aaggctggcg cggacgtaaa tgcgaagac 300  
 atcttcggca aaaccccggc tgacattgcg gcggatgcgg gccacgaaga tatcgccgaa 360  
 gtgttgcaaa aggacgcggg cagcccgacc ccaacccta cgaccccgac tcctacgcct 420  
 acgactccga ctccgacccc tacgggtagc gatctgggta agaagctgct ggaagccgca 480  
 cgcgcaggcc aagacgacga agtccgtgag ctctgaagg caggcgccga tgtcaatgca 540  
 aaagactact tttctcatc gccactgcac ctggcagccc gtaacgggtca tctgaagatt 600  
 gtagaagtgt tgctgaaggc gggcgagat gttaatgcaa aggactttgc gggcaagacc 660  
 ccgttgacac ttgcggcgaa tgagggtcac ttagagattg tggaggtcct gttgaaggcc 720  
 ggtgccgacg tgaatgcaca agacattttc ggcaagacgc cggcagacat cgcagcggac 780  
 gcgggtcacg aggacatcgc tgaagttctg cagaaagctg cgggttcccc gacgccaacg 840  
 cctaccacgc ctacgccaac tcctaccacc ccgacccga cgccgaccgg cagcgatttg 900  
 ggtaaaaagc tgctgcaggc cgcgagagcg ggccagttgg acgaggtgcg tgagctgttg 960  
 aaagcgggtg cagacgttaa tgctaaagac cgcgagggtg tcactccgtt gcatctggcg 1020  
 gcacagcacg gtcatttga gatcgtagaa gtcttgttga aagctggtgc tgacgtcaat 1080  
 gccaaaggatg tttggggctc tactccactg catctcgcgg cgtggcaggg tcaccttgag 1140  
 attgtcgagg ttttgctgaa agcgggagcc gacgtcaatg cgaaagatct ggcaggcgcg 1200  
 acccctctgc atgttgcggc gctgtacggt cacctggaaa tcgttgaagt cctcttgaag 1260  
 gcgggtgcgg atgtaaagc gcaggacaag agcggtaaaa cgccggccga tctggcagca 1320

cgcgccggtc accaagatat cgagaagtg ctgcaaaagg ctgcgggtag cccaacccca 1380  
 acgccgacca ctctacccc tacccaacc accccaactc caactccgac tggtagcgac 1440  
 ctgggcaaga aactgctgca agccgcacgt gccggtcagc tggacgaagt gcgtgagttg 1500  
 ttgaaggctg gcgctgacgt gaacgcaaaa gaccgtgagg gtaagacgcc gttacacgtg 1560  
 gcagcgcaag aaggccacct ggagattgtt gaagtgtgc tcaaagctgg cgcagacgtc 1620  
 aacgctaaag atgtgtgggg tcgcactccg ctgcatctgg ccgctgggat tggtcatttg 1680  
 gaaattgtgg aagtctgtct caaggccggc gctgatgtca acgcaaaga tgtgagcggg 1740  
 gcgaccccg cgcacgcagc ggcgctgcac ggtcacttgg aaatcgtgga ggttctgttg 1800  
 aacgccggtg ctgatgttaa cgcgcaagat aaatcgggta agactccggc ggatctggcg 1860  
 gctcgtgcgg gtcaccagga tattgccgaa gttttgcaga aagccgctgg ttctcctacg 1920  
 ccgaccccg cgcgcccgc tccaaccccg accacgccga cgcctacccc gaccggtagc 1980  
 gacttgggta agaaactgtt gcaggcagcg cgcgcgggtc aactggacga ggttcgtgag 2040  
 cttttgaaag ccggtgcgga cgtaacgcg aaggatcaag aaggcattac cccactgcac 2100  
 gtggcggcac atcagggtca tctggagatc gttgaggttc tgctgaaggc cggagcggat 2160  
 gtcaacgcga aagacgtttg gggccgtacc ccattgcacc tggcggcgtg gcgcggtcac 2220  
 ctcgaaatcg tcgaagtgtt actgaaagct ggggcagatg tgaacgcaa ggaccacgcg 2280  
 ggtgcgacgc cgctgcatgc ggcagcgtg agcggccatc tggaaattgt cgaagtcctg 2340  
 ctgaaagccg gcgcagatgt taatgccag gataaatccg gtaagacccc ggcagacctg 2400  
 gcagcgcgtg cgggccacca agacattgcc gaggttctgc aaaaagccgc g 2451

<210> 75

<211> 751

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 75

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Glu | Ala | Ala | Arg | Ala | Gly | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asp | Asp | Glu | Val | Arg | Glu | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Asp | Tyr | Phe | Ser | His | Thr | Pro | Leu | His | Leu | Ala | Ala | Arg | Asn | Gly |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     | 480 |     |
| Leu | Gly | Lys | Lys | Leu | Leu | Leu | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Arg | Ile | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Phe | Gly | Gln | Thr | Pro | Leu | His | Val | Ala | Ala | Val | Ala | Gly | His | Leu | Glu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val | Gly | His | Leu |
| 545 |     |     |     |     | 550 |     |     |     | 555 |     |     |     |     |     | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu | Leu | His | Ala | Ala | Gln | Ala | Gly |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     |     | 640 |
| Gln | Leu | Asp | Glu | Val | Arg | Ile | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro | Leu | His | Ile | Ala | Ala | Phe | His |
|     |     |     | 660 |     |     |     | 665 |     |     |     |     | 670 |     |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     | 675 |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     |
| Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr | Pro | Leu | His | Leu | Ala | Ala | Ala |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     |     | 715 |     |     |     | 720 |
| Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Glu | Ser | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |

<210> 76

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 76

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Asp | Ser | Ile | Gly | Tyr | Thr | Pro | Leu | His | His | Ala | Ala | Arg | Val |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Asn | Ala | Lys | Asp | Trp | Ile | Gly | Ile | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

<210> 77

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Spike protein binding domain

<400> 77

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

<210> 78

<211> 2253

<212> PRT

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding multi-specific binding protein

<400> 78

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Ala | Thr | Cys | Cys | Gly | Ala | Cys | Cys | Thr | Gly | Gly | Gly | Thr | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Ala | Ala | Ala | Gly | Cys | Thr | Gly | Cys | Thr | Gly | Gly | Ala | Gly | Gly | Cys |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ala | Gly | Cys | Gly | Cys | Gly | Thr | Gly | Cys | Cys | Gly | Gly | Thr | Cys | Ala | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Ala | Cys | Gly | Ala | Cys | Gly | Ala | Gly | Gly | Thr | Thr | Cys | Gly | Cys | Gly |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|         |     |     |         |        |     |     |         |     |     |        |     |     |     |     |         |
|---------|-----|-----|---------|--------|-----|-----|---------|-----|-----|--------|-----|-----|-----|-----|---------|
| Ala 65  | Ala | Thr | Thr     | Gly 70 | Cys | Thr | Thr     | Ala | Ala | Ala 75 | Gly | Cys | Gly | Gly | Gly 80  |
| Thr     | Gly | Cys | Ala     | Gly 85 | Ala | Cys | Gly     | Thr | Cys | Ala    | Ala | Cys | Gly | Cys | Cys 90  |
| Ala     | Ala | Ala | Gly 100 | Ala    | Thr | Thr | Ala     | Thr | Thr | Thr    | Cys | Thr | Cys | Thr | Cys 110 |
| Ala     | Thr | Ala | Cys     | Cys    | Cys | Cys | Gly 120 | Thr | Thr | Gly    | Cys | Ala | Thr | Thr | Thr 125 |
| Ala     | Gly | Cys | Cys     | Gly    | Cys | Gly | Cys     | Gly | Thr | Ala    | Ala | Thr | Gly | Gly | Cys 130 |
| Cys 145 | Ala | Thr | Cys     | Thr    | Gly | Ala | Ala     | Gly | Ala | Thr    | Cys | Gly | Thr | Cys | Gly 150 |
| Ala     | Gly | Gly | Thr     | Cys    | Cys | Thr | Cys     | Thr | Thr | Gly    | Ala | Ala | Gly | Gly | Cys 165 |
| Ala     | Gly | Gly | Cys     | Gly    | Cys | Gly | Gly     | Ala | Thr | Gly    | Thr | Cys | Ala | Ala | Thr 180 |
| Gly     | Cys | Gly | Ala     | Ala    | Gly | Gly | Ala     | Thr | Thr | Thr    | Thr | Gly | Cys | Gly | Gly 195 |
| Gly     | Cys | Ala | Ala     | Ala    | Ala | Cys | Gly     | Cys | Cys | Gly    | Cys | Thr | Gly | Cys | Ala 210 |
| Cys 225 | Thr | Thr | Ala     | Gly    | Cys | Gly | Gly     | Cys | Gly | Ala    | Ala | Cys | Gly | Ala | Gly 230 |
| Gly     | Gly | Thr | Cys     | Ala    | Thr | Thr | Thr     | Ala | Gly | Ala    | Ala | Ala | Thr | Cys | Gly 245 |
| Thr     | Thr | Gly | Ala     | Ala    | Gly | Thr | Cys     | Cys | Thr | Gly    | Thr | Thr | Ala | Ala | Ala 260 |
| Ala     | Gly | Cys | Gly     | Gly    | Gly | Cys | Gly     | Cys | Cys | Gly    | Ala | Thr | Gly | Thr | Gly 275 |
| Ala     | Ala | Thr | Gly     | Cys    | Gly | Cys | Ala     | Gly | Gly | Ala    | Thr | Ala | Thr | Thr | Thr 290 |
| Thr     | Cys | Gly | Gly     | Thr    | Ala | Ala | Ala     | Ala | Cys | Gly    | Cys | Cys | Gly | Gly | Cys 305 |
| Gly     | Gly | Ala | Cys     | Ala    | Thr | Thr | Gly     | Cys | Gly | Gly    | Cys | Ala | Gly | Ala | Thr 320 |
| Gly     | Cys | Gly | Gly     | Gly    | Thr | Cys | Ala     | Thr | Gly | Ala    | Ala | Gly | Ala | Thr | Ala 335 |
| Thr     | Cys | Gly | Cys     | Ala    | Gly | Ala | Ala     | Gly | Thr | Cys    | Cys | Thr | Gly | Cys | Ala 350 |
| Gly     | Ala | Ala | Gly     | Gly    | Cys | Ala | Gly     | Cys | Ala | Gly    | Gly | Cys | Ala | Gly | Cys 365 |
| Cys     | Cys | Thr | Ala     | Cys    | Ala | Cys | Cys     | Thr | Ala | Cys    | Gly | Cys | Cys | Gly | Ala 380 |
| Cys     | Thr | Ala | Cys     | Gly    | Cys | Cys | Thr     | Ala | Cys | Gly    | Cys | Cys | Gly | Ala | Cys 395 |
| Thr     | Cys | Cys | Gly     | Ala    | Cys | Thr | Ala     | Cys | Cys | Cys    | Cys | Gly | Ala | Cys | Thr 410 |
| Cys     | Cys | Gly | Ala     | Cys    | Cys | Cys | Cys     | Gly | Ala | Cys    | Cys | Gly | Gly | Ala | Thr 425 |
| Cys     | Ala | Gly | Ala     | Cys    | Cys | Thr | Gly     | Gly | Gly | Thr    | Ala | Ala | Ala | Ala | Ala 440 |
| Gly     | Cys | Thr | Gly     | Cys    | Thr | Gly | Gly     | Ala | Gly | Gly    | Cys | Ala | Gly | Cys | Gly 455 |
| Cys     | Gly | Thr | Gly     | Cys    | Gly | Gly | Thr     | Cys | Ala | Ala    | Gly | Ala | Cys | Gly | Gly 470 |
|         |     |     |         |        |     |     |         |     |     |        |     |     |     |     |         |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Ala | Cys | Gly | Ala | Gly | Gly | Thr | Thr | Cys | Gly | Cys | Gly | Ala | Ala | Thr | Thr |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |
| Gly | Cys | Thr | Thr | Ala | Ala | Ala | Gly | Cys | Gly | Gly | Gly | Thr | Gly | Cys | Ala |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |
| Gly | Ala | Cys | Gly | Thr | Cys | Ala | Ala | Cys | Gly | Cys | Cys | Ala | Ala | Ala | Gly |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |
| Ala | Thr | Thr | Ala | Thr | Thr | Thr | Cys | Thr | Cys | Thr | Cys | Ala | Thr | Ala | Cys |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |  |
| Cys | Cys | Cys | Gly | Thr | Thr | Gly | Cys | Ala | Thr | Thr | Thr | Ala | Gly | Cys | Cys |  |  |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |
| Gly | Cys | Gly | Cys | Gly | Thr | Ala | Ala | Thr | Gly | Gly | Cys | Cys | Ala | Thr | Cys |  |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |  |
| Thr | Gly | Ala | Ala | Gly | Ala | Thr | Cys | Gly | Thr | Cys | Gly | Ala | Gly | Gly | Thr |  |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |  |
| Cys | Cys | Thr | Cys | Thr | Thr | Gly | Ala | Ala | Gly | Gly | Cys | Ala | Gly | Gly | Cys |  |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |  |
| Gly | Cys | Gly | Gly | Ala | Thr | Gly | Thr | Cys | Ala | Ala | Thr | Gly | Cys | Gly | Ala |  |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |  |
| Ala | Gly | Gly | Ala | Thr | Thr | Thr | Thr | Gly | Cys | Gly | Gly | Gly | Cys | Ala | Ala |  |  |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |  |  |
| Ala | Ala | Cys | Gly | Cys | Cys | Gly | Cys | Thr | Gly | Cys | Ala | Cys | Thr | Thr | Ala |  |  |
|     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |     |  |  |
| Gly | Cys | Gly | Gly | Cys | Gly | Ala | Ala | Cys | Gly | Ala | Gly | Gly | Gly | Thr | Cys |  |  |
|     |     | 675 |     |     |     |     | 680 |     |     |     | 685 |     |     |     |     |  |  |
| Ala | Thr | Thr | Thr | Ala | Gly | Ala | Ala | Ala | Thr | Cys | Gly | Thr | Thr | Gly | Ala |  |  |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |  |  |
| Ala | Gly | Thr | Cys | Cys | Thr | Gly | Thr | Thr | Ala | Ala | Ala | Ala | Gly | Cys | Gly |  |  |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |  |  |
| Gly | Gly | Cys | Gly | Cys | Cys | Gly | Ala | Thr | Gly | Thr | Gly | Ala | Ala | Thr | Gly |  |  |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |
| Cys | Gly | Cys | Ala | Gly | Gly | Ala | Thr | Ala | Thr | Thr | Thr | Thr | Cys | Gly | Gly |  |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |  |
| Thr | Ala | Ala | Ala | Ala | Cys | Gly | Cys | Cys | Gly | Gly | Cys | Gly | Gly | Ala | Cys |  |  |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |  |  |
| Ala | Thr | Thr | Gly | Cys | Gly | Gly | Cys | Ala | Gly | Ala | Thr | Gly | Cys | Gly | Gly |  |  |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |  |
| Gly | Thr | Cys | Ala | Thr | Gly | Ala | Ala | Gly | Ala | Thr | Ala | Thr | Cys | Gly | Cys |  |  |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |  |  |
| Ala | Gly | Ala | Ala | Gly | Thr | Cys | Cys | Thr | Gly | Cys | Ala | Gly | Ala | Ala | Gly |  |  |
|     |     |     | 805 |     |     |     |     |     | 810 |     |     |     |     | 815 |     |  |  |
| Gly | Cys | Ala | Gly | Cys | Ala | Gly | Gly | Thr | Thr | Cys | Cys | Cys | Cys | Gly | Ala |  |  |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |  |  |
| Cys | Cys | Cys | Cys | Thr | Ala | Cys | Gly | Cys | Cys | Ala | Ala | Cys | Gly | Ala | Cys |  |  |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |  |  |
| Thr | Cys | Cys | Gly | Ala | Cys | Cys | Cys | Cys | Ala | Ala | Cys | Thr | Cys | Cys | Ala |  |  |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |  |  |
| Ala | Cys | Gly | Ala | Cys | Cys | Cys | Cys | Thr | Ala | Cys | Cys | Cys | Cys | Gly | Ala |  |  |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |  |  |
| Cys | Cys | Cys | Cys | Gly | Ala | Cys | Cys | Gly | Gly | Ala | Thr | Cys | Ala | Gly | Ala |  |  |
|     |     |     | 885 |     |     |     |     |     | 890 |     |     |     |     | 895 |     |  |  |
| Cys | Cys | Thr | Gly | Gly | Gly | Thr | Ala | Ala | Ala | Ala | Ala | Ala | Cys | Thr | Gly |  |  |
|     |     | 900 |     |     |     |     | 905 |     |     |     |     | 910 |     |     |     |  |  |
| Cys | Thr | Gly | Cys | Ala | Ala | Gly | Cys | Ala | Gly | Cys | Ala | Cys | Gly | Thr | Gly |  |  |
|     |     | 915 |     |     |     |     | 920 |     |     |     |     | 925 |     |     |     |  |  |

Cys Ala Gly Gly Thr Cys Ala Gly Cys Thr Gly Gly Ala Thr Gly Ala  
 930 935 940  
 Ala Gly Thr Thr Cys Gly Thr Gly Ala Ala Cys Thr Gly Cys Thr Gly  
 945 950 955 960  
 Ala Ala Ala Gly Cys Ala Gly Gly Cys Gly Cys Gly Ala Thr Gly  
 965 970 975  
 Thr Thr Ala Ala Thr Gly Cys Ala Ala Ala Gly Ala Thr Ala Gly  
 980 985 990  
 Ala Gly Ala Gly Gly Gly Cys Ala Ala Gly Ala Cys Cys Cys Gly  
 995 1000 1005  
 Cys Thr Gly Cys Ala Thr Gly Thr Gly Gly Cys Thr Gly Cys Thr Cys  
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 Ala Ala Gly Ala Gly Gly Gly Thr Cys Ala Cys Cys Thr Gly Gly Ala  
 1025 1030 1035 1040  
 Ala Ala Thr Thr Gly Thr Thr Gly Ala Ala Gly Thr Thr Cys Thr Gly  
 1045 1050 1055  
 Cys Thr Gly Ala Ala Ala Gly Cys Cys Gly Gly Thr Gly Cys Ala Gly  
 1060 1065 1070  
 Ala Thr Gly Thr Thr Ala Ala Thr Gly Cys Ala Ala Ala Ala Gly Ala  
 1075 1080 1085  
 Thr Gly Thr Gly Thr Gly Gly Gly Cys Ala Gly Ala Ala Cys Cys  
 1090 1095 1100  
 Cys Cys Gly Cys Thr Gly Cys Ala Thr Cys Thr Gly Gly Cys Thr Gly  
 1105 1110 1115 1120  
 Cys Thr Thr Gly Gly Ala Thr Cys Gly Gly Thr Cys Ala Cys Cys Thr  
 1125 1130 1135  
 Gly Gly Ala Ala Ala Thr Thr Gly Thr Thr Gly Ala Ala Gly Thr Thr  
 1140 1145 1150  
 Cys Thr Gly Cys Thr Gly Ala Ala Ala Gly Cys Cys Gly Gly Thr Gly  
 1155 1160 1165  
 Cys Ala Gly Ala Thr Gly Thr Thr Ala Ala Thr Gly Cys Ala Ala Ala  
 1170 1175 1180  
 Ala Gly Ala Thr Gly Thr Gly Thr Cys Thr Gly Gly Cys Gly Cys Thr  
 1185 1190 1195 1200  
 Ala Cys Cys Cys Cys Gly Cys Thr Gly Cys Ala Thr Gly Cys Gly Gly  
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 Cys Thr Gly Cys Thr Cys Thr Gly Cys Ala Cys Gly Gly Thr Cys Ala  
 1220 1225 1230  
 Cys Cys Thr Gly Gly Ala Ala Ala Thr Thr Gly Thr Thr Gly Ala Ala  
 1235 1240 1245  
 Gly Thr Thr Cys Thr Gly Cys Thr Gly Ala Ala Cys Gly Cys Cys Gly  
 1250 1255 1260  
 Gly Thr Gly Cys Ala Gly Ala Thr Gly Thr Thr Ala Ala Cys Gly Cys  
 1265 1270 1275 1280  
 Ala Cys Ala Gly Gly Ala Thr Ala Ala Ala Gly Cys Gly Gly Thr  
 1285 1290 1295  
 Ala Ala Ala Ala Cys Cys Cys Cys Thr Gly Cys Cys Gly Ala Thr Cys  
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 Thr Gly Gly Cys Ala Gly Cys Thr Cys Gly Cys Gly Cys Cys Gly Gly  
 1315 1320 1325  
 Thr Cys Ala Thr Cys Ala Gly Gly Ala Thr Ala Thr Thr Gly Cys Thr  
 1330 1335 1340  
 Gly Ala Ala Gly Thr Gly Cys Thr Gly Cys Ala Gly Ala Ala Gly Gly  
 1345 1350 1355 1360

Cys Ala Gly Cys Ala Gly Gly Cys Ala Gly Cys Cys Cys Cys Ala Cys  
 1365 1370 1375  
 Gly Cys Cys Ala Ala Cys Thr Cys Cys Thr Ala Cys Ala Ala Cys Cys  
 1380 1385 1390  
 Cys Cys Cys Ala Cys Ala Cys Cys Thr Ala Cys Ala Cys Cys Gly Ala  
 1395 1400 1405  
 Cys Gly Ala Cys Gly Cys Cys Gly Ala Cys Ala Cys Cys Gly Ala Cys  
 1410 1415 1420  
 Thr Cys Cys Ala Ala Cys Cys Gly Gly Ala Thr Cys Ala Gly Ala Cys  
 1425 1430 1435 1440  
 Cys Thr Gly Gly Gly Thr Ala Ala Ala Ala Ala Thr Thr Gly Thr  
 1445 1450 1455  
 Thr Ala Thr Thr Gly Gly Cys Cys Gly Cys Thr Cys Gly Cys Gly Cys  
 1460 1465 1470  
 Gly Gly Gly Cys Cys Ala Gly Cys Thr Gly Gly Ala Cys Gly Ala Gly  
 1475 1480 1485  
 Gly Thr Ala Cys Gly Thr Ala Thr Cys Thr Thr Ala Thr Thr Gly Ala  
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 Ala Gly Gly Cys Thr Gly Gly Gly Gly Cys Ala Gly Ala Cys Gly Thr  
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 Cys Ala Ala Thr Gly Cys Gly Ala Ala Gly Gly Ala Cys Gly Thr Thr  
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 Thr Thr Thr Gly Gly Ala Cys Ala Gly Ala Cys Thr Cys Cys Thr Cys  
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 Thr Thr Cys Ala Thr Gly Thr Gly Gly Cys Cys Gly Cys Cys Gly Thr  
 1555 1560 1565  
 Gly Gly Cys Cys Gly Gly Thr Cys Ala Thr Cys Thr Gly Gly Ala Gly  
 1570 1575 1580  
 Ala Thr Thr Gly Thr Cys Gly Ala Ala Gly Thr Ala Thr Thr Ala Thr  
 1585 1590 1595 1600  
 Thr Ala Ala Ala Gly Gly Cys Thr Gly Gly Thr Gly Cys Ala Gly Ala  
 1605 1610 1615  
 Thr Gly Thr Ala Ala Ala Thr Gly Cys Thr Ala Ala Ala Gly Ala Thr  
 1620 1625 1630  
 Thr Cys Thr Ala Thr Cys Gly Gly Ala Thr Ala Cys Ala Cys Ala Cys  
 1635 1640 1645  
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 1650 1655 1660  
 Thr Cys Gly Cys Gly Thr Thr Gly Gly Ala Cys Ala Thr Thr Thr Ala  
 1665 1670 1675 1680  
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 1685 1690 1695  
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 Cys Gly Ala Cys Gly Thr Thr Ala Ala Thr Gly Cys Cys Ala Ala Gly  
 1715 1720 1725  
 Gly Ala Thr Thr Gly Gly Ala Thr Cys Gly Gly Gly Ala Thr Cys Ala  
 1730 1735 1740  
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 1745 1750 1755 1760  
 Ala Gly Cys Ala Thr Thr Thr Gly Ala Gly Gly Gly Thr Cys Ala Cys  
 1765 1770 1775  
 Cys Ala Gly Gly Ala Thr Ala Thr Thr Gly Cys Thr Gly Ala Ala Gly  
 1780 1785 1790

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Thr  | Thr  | Cys  | Thr  | Gly  | Cys  | Ala  | Gly  | Ala  | Ala  | Gly  | Gly  | Cys  | Ala  | Gly  | Cys  |  |
|      |      | 1795 |      |      |      |      | 1800 |      |      |      |      | 1805 |      |      |      |  |
| Ala  | Gly  | Gly  | Thr  | Thr  | Cys  | Gly  | Cys  | Cys  | Gly  | Ala  | Cys  | Cys  | Cys  | Cys  | Ala  |  |
|      | 1810 |      |      |      |      | 1815 |      |      |      |      | 1820 |      |      |      |      |  |
| Ala  | Cys  | Cys  | Cys  | Cys  | Thr  | Ala  | Cys  | Cys  | Ala  | Cys  | Thr  | Cys  | Cys  | Ala  | Ala  |  |
| 1825 |      |      |      |      | 1830 |      |      |      |      | 1835 |      |      |      |      | 1840 |  |
| Cys  | Gly  | Cys  | Cys  | Gly  | Ala  | Cys  | Gly  | Cys  | Cys  | Thr  | Ala  | Cys  | Cys  | Ala  | Cys  |  |
|      |      |      |      | 1845 |      |      |      |      | 1850 |      |      |      |      | 1855 |      |  |
| Thr  | Cys  | Cys  | Ala  | Ala  | Cys  | Ala  | Cys  | Cys  | Ala  | Ala  | Cys  | Ala  | Cys  | Cys  | Ala  |  |
|      |      |      | 1860 |      |      |      |      | 1865 |      |      |      |      | 1870 |      |      |  |
| Ala  | Cys  | Gly  | Gly  | Gly  | Ala  | Thr  | Cys  | Ala  | Gly  | Ala  | Cys  | Cys  | Thr  | Gly  | Gly  |  |
|      |      | 1875 |      |      |      |      | 1880 |      |      |      |      | 1885 |      |      |      |  |
| Gly  | Thr  | Cys  | Ala  | Ala  | Ala  | Ala  | Gly  | Thr  | Thr  | Gly  | Thr  | Thr  | Ala  | Cys  | Ala  |  |
|      | 1890 |      |      |      |      | 1895 |      |      |      |      |      | 1900 |      |      |      |  |
| Cys  | Gly  | Cys  | Gly  | Gly  | Cys  | Thr  | Cys  | Ala  | Ala  | Gly  | Cys  | Gly  | Gly  | Gly  | Ala  |  |
| 1905 |      |      |      |      | 1910 |      |      |      |      | 1915 |      |      |      |      | 1920 |  |
| Cys  | Ala  | Ala  | Thr  | Thr  | Ala  | Gly  | Ala  | Cys  | Gly  | Ala  | Gly  | Gly  | Thr  | Cys  | Cys  |  |
|      |      |      |      | 1925 |      |      |      |      | 1930 |      |      |      |      | 1935 |      |  |
| Gly  | Thr  | Ala  | Thr  | Thr  | Cys  | Thr  | Gly  | Cys  | Thr  | Thr  | Ala  | Ala  | Ala  | Gly  | Cys  |  |
|      |      |      | 1940 |      |      |      |      | 1945 |      |      |      |      |      | 1950 |      |  |
| Cys  | Gly  | Gly  | Gly  | Gly  | Cys  | Thr  | Gly  | Ala  | Thr  | Gly  | Thr  | Ala  | Ala  | Ala  | Thr  |  |
|      |      | 1955 |      |      |      |      |      | 1960 |      |      |      |      | 1965 |      |      |  |
| Gly  | Cys  | Ala  | Ala  | Ala  | Ala  | Gly  | Ala  | Cys  | Ala  | Ala  | Ala  | Cys  | Ala  | Gly  | Gly  |  |
|      | 1970 |      |      |      |      | 1975 |      |      |      |      |      | 1980 |      |      |      |  |
| Gly  | Cys  | Ala  | Ala  | Cys  | Ala  | Cys  | Ala  | Cys  | Cys  | Cys  | Thr  | Thr  | Ala  | Cys  | Ala  |  |
| 1985 |      |      |      |      | 1990 |      |      |      |      | 1995 |      |      |      |      | 2000 |  |
| Thr  | Ala  | Thr  | Cys  | Gly  | Cys  | Gly  | Gly  | Cys  | Ala  | Thr  | Thr  | Cys  | Cys  | Ala  | Thr  |  |
|      |      |      |      | 2005 |      |      |      |      | 2010 |      |      |      |      | 2015 |      |  |
| Gly  | Gly  | Ala  | Cys  | Ala  | Thr  | Cys  | Thr  | Gly  | Gly  | Ala  | Gly  | Ala  | Thr  | Thr  | Gly  |  |
|      |      |      | 2020 |      |      |      |      | 2025 |      |      |      |      |      | 2030 |      |  |
| Thr  | Gly  | Gly  | Ala  | Ala  | Gly  | Thr  | Ala  | Cys  | Thr  | Gly  | Cys  | Thr  | Gly  | Ala  | Ala  |  |
|      |      | 2035 |      |      |      |      | 2040 |      |      |      |      | 2045 |      |      |      |  |
| Ala  | Gly  | Cys  | Cys  | Gly  | Gly  | Gly  | Gly  | Cys  | Ala  | Gly  | Ala  | Thr  | Gly  | Thr  | Cys  |  |
|      | 2050 |      |      |      |      | 2055 |      |      |      |      | 2060 |      |      |      |      |  |
| Ala  | Ala  | Cys  | Gly  | Cys  | Thr  | Ala  | Ala  | Ala  | Gly  | Ala  | Cys  | Cys  | Ala  | Ala  | Thr  |  |
| 2065 |      |      |      |      | 2070 |      |      |      |      | 2075 |      |      |      |      | 2080 |  |
| Gly  | Gly  | Gly  | Gly  | Ala  | Thr  | Thr  | Gly  | Ala  | Cys  | Cys  | Cys  | Cys  | Cys  | Cys  | Thr  |  |
|      |      |      |      | 2085 |      |      |      |      | 2090 |      |      |      |      | 2095 |      |  |
| Thr  | Cys  | Ala  | Thr  | Thr  | Thr  | Gly  | Gly  | Cys  | Cys  | Gly  | Cys  | Thr  | Gly  | Cys  | Cys  |  |
|      |      |      | 2100 |      |      |      |      | 2105 |      |      |      |      | 2110 |      |      |  |
| Thr  | Gly  | Gly  | Gly  | Gly  | Cys  | Cys  | Ala  | Thr  | Thr  | Thr  | Gly  | Gly  | Ala  | Gly  | Ala  |  |
|      |      | 2115 |      |      |      |      |      | 2120 |      |      |      |      | 2125 |      |      |  |
| Thr  | Thr  | Gly  | Thr  | Ala  | Gly  | Ala  | Gly  | Gly  | Thr  | Ala  | Cys  | Thr  | Thr  | Cys  | Thr  |  |
|      |      |      |      |      | 2135 |      |      |      |      |      | 2140 |      |      |      |      |  |
| Gly  | Ala  | Ala  | Gly  | Gly  | Cys  | Gly  | Gly  | Gly  | Gly  | Gly  | Cys  | Thr  | Gly  | Ala  | Thr  |  |
| 2145 |      |      |      |      | 2150 |      |      |      |      |      | 2155 |      |      |      | 2160 |  |
| Gly  | Thr  | Thr  | Ala  | Ala  | Thr  | Gly  | Cys  | Cys  | Cys  | Ala  | Gly  | Gly  | Ala  | Thr  | Ala  |  |
|      |      |      |      | 2165 |      |      |      |      | 2170 |      |      |      |      | 2175 |      |  |
| Ala  | Cys  | Thr  | Ala  | Thr  | Gly  | Gly  | Gly  | Cys  | Ala  | Ala  | Ala  | Cys  | Thr  | Cys  | Cys  |  |
|      |      |      | 2180 |      |      |      |      | 2185 |      |      |      |      | 2190 |      |      |  |
| Thr  | Gly  | Cys  | Gly  | Gly  | Ala  | Thr  | Cys  | Thr  | Gly  | Gly  | Cys  | Gly  | Gly  | Cys  | Thr  |  |
|      |      | 2195 |      |      |      |      |      | 2200 |      |      |      |      | 2205 |      |      |  |
| Gly  | Ala  | Ala  | Thr  | Cys  | Thr  | Gly  | Gly  | Gly  | Cys  | Ala  | Cys  | Cys  | Ala  | Ala  | Gly  |  |
|      | 2210 |      |      |      |      | 2215 |      |      |      |      |      | 2220 |      |      |      |  |

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 Gly Cys Ala Gly Ala Ala Gly Gly Cys Gly Gly Cys Ala  
 2245 2250

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 <213> Artificial Sequence

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys |
|     |     |     |     |     | 325 |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | Leu | His | Ala | Ala | Gln | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Ile | Leu |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Pro | Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | Glu | Ile | Val | Glu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | Gln | Asp | Ile | Ala |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |     |     |     |     |     |     |     |
|     | 450 |     |     |     |     | 455 |     |     |     |     |     |     |     |     |     |

<210> 80  
 <211> 477  
 <212> DNA  
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<220>  
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|                                                                    |     |
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| cgtgaactgc tgaaagcagg cgccgatgtt aatgcaaaag atagagaggg caagacccccg | 120 |
| ctgcatgtgg ctgctcaaga gggtcacctg gaaattgttg aagttctgct gaaagccggt  | 180 |
| gcagatgtta atgcaaaaga tgtgtggggc agaacccgc tgcatctggc tgcttgatc    | 240 |
| ggtcacctgg aaattgttga agttctgctg aaagccggtg cagatgttaa tgcaaaagat  | 300 |
| gtgtctggcg ctaccccgct gcatgaggct gctctgcacg gtcacctgga aattgttgaa  | 360 |
| gttctgctga acgccggtgc agatgttaac gcacaggata aaagcggtaa aaccctgcc   | 420 |
| gatctggcag ctgcgccgg tcatcaggat attgctgaag tgctgcagaa ggcagca      | 477 |

<210> 81  
 <211> 378  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Nucleic acid encoding spike protein binding domain

<400> 81

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| ggatcagacc tgggtaaaaa attgttattg gccgctcgcg cgggccagct ggacgaggta   | 60  |
| cgtatcttat tgaaggctgg ggcagacgtc aatgcgaagg acgttttttg acagactcct   | 120 |
| cttcatgtgg ccgccgtggc cggtcacatctg gagattgtcg aagtattatt aaaggctggt | 180 |
| gcagatgtaa atgctaaaga ttctatcgga tacacaccgt tgcacatgc agctcgcgtt    | 240 |
| ggacatttag agatcgtcga ggtcttgctg aaagcaggtg ccgacgttaa tgccaaggat   | 300 |
| tggatcgggg tcaccccagc ggatcttgca gcatttgagg gtcaccagga tattgctgaa   | 360 |
| gttctgcaga aggcagca                                                 | 378 |

<210> 82

<211> 378

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding spike protein binding domain

<400> 82

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ggatcagacc tgggtcaaaa gttgttacac gcggctcaag cgggacaatt agacgaggtc | 60  |
| cgtattctgc ttaaagccgg ggctgatgta aatgcaaaag acaaacaggg caacacaccc | 120 |
| ttacatatcg cggcattcca tggacatctg gagattgtgg aagtactgct gaaagccggg | 180 |
| gcagatgtca acgctaaaga ccaatgggga ttgaccccc ttcatctggc cgctgcctgg  | 240 |
| ggccatttgg agattgtaga ggtacttctg aaggcggggg ctgatgttaa tgcccaggat | 300 |
| aactatgggc aaactcctgc ggatctggcg gctgaatctg ggcaccaaga tattgctgaa | 360 |
| gttctgcaga aggcggca                                               | 378 |

<210> 83

<211> 1365

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding multi-specific binding protein

<400> 83

|                                                                   |    |
|-------------------------------------------------------------------|----|
| ggatcagacc tgggtaaaaa actgctgcaa gcagcacgtg caggtcagct ggatgaagtt | 60 |
|-------------------------------------------------------------------|----|

|                                                                    |      |
|--------------------------------------------------------------------|------|
| cgtgaactgc tgaaagcagg cgccgatgtt aatgcaaaag atagagaggg caagacccccg | 120  |
| ctgcatgtgg ctgctcaaga gggtcacctg gaaattgttg aagttctgct gaaagccggt  | 180  |
| gcagatgtta atgcaaaaga tgtgtggggc agaaccccg cgcacatctggc tgcttggatc | 240  |
| ggtcacctgg aaattgttga agttctgctg aaagccggtg cagatgttaa tgcaaaagat  | 300  |
| gtgtctggcg ctaccccgct gcatgctggc gctctgcacg gtcacctgga aattgttgaa  | 360  |
| gttctgctga acgccggtgc agatgttaac gcacaggata aaagcggtaa aaccctgcc   | 420  |
| gatctggcag ctgcgcccgg tcatcaggat attgctgaag tgctgcagaa ggcagcaggc  | 480  |
| agccccacgc caactcctac aacccccaca cctacaccga cgacgccgac accgactcca  | 540  |
| accggatcag acctgggtaa aaaattgtta ttggccgctc gcgcggggcca gctggacgag | 600  |
| gtacgtatct tattgaaggc tggggcagac gtcaatgcga aggacgtttt tggacagact  | 660  |
| cctcttcatg tggccgccgt ggccggtcat ctggagattg tcgaagtatt attaaaggct  | 720  |
| ggcgcagatg taaatgctaa agattctatc ggatacacac cgttgcatca tgcagctcgc  | 780  |
| gttggacatt tagagatcgt cgaggtcctt ctgaaagcag gtgccgacgt taatgccaaag | 840  |
| gattggatcg ggatcacccc agcggatctt gcagcatttg agggcacca ggatattgct   | 900  |
| gaagttctgc agaaggcagc aggttcgccg accccaaccc ctaccactcc aacgccgacg  | 960  |
| cctaccactc caacaccaac accaacggga tcagacctgg gtcaaaaagtt gttacacgcg | 1020 |
| gctcaagcgg gacaattaga cgaggtccgt attctgctta aagccggggc tgatgtaaat  | 1080 |
| gcaaaagaca aacagggcaa cacaccctta catatcgcgg cattccatgg acatctggag  | 1140 |
| attgtggaag tactgctgaa agccggggca gatgtcaacg ctaaagacca atggggattg  | 1200 |
| accccccttc atttggccgc tgcctggggc catttggaga ttgtagaggt acttctgaag  | 1260 |
| gcgggggctg atgttaatgc ccaggataac tatgggcaaa ctctgcgga tctggcggct   | 1320 |
| gaatctgggc accaagatat tgctgaagtt ctgcagaagg cggca                  | 1365 |

<210> 84

<211> 766

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 84

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



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

<210> 86  
 <211> 2298  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Nucleic acid encoding multi-specific binding protein

<400> 86  
 ggatccgacc tgggtaaaaa gctgctggag gcagcgctg ccggtcaaga cgacgaggtt 60  
 cgcgaaattgc ttaaagcggg tgcagacgtc aacgccaaag attatttctc tcataccccg 120  
 ttgcatttag ccgcgcgtaa tggccatctg aagatcgtcg aggtcctctt gaaggcaggc 180  
 gcggatgtca atgcgaagga ttttgcgggc aaaacgccgc tgcacttagc ggcgaacgag 240  
 ggtcatttag aaatcgttga agtcctgtta aaagcgggcg ccgatgtgaa tgcgcaggat 300  
 attttcggta aaacgccggc ggacattgcg gcagatgcgg gtcatagaaga tatcgcagaa 360  
 gtcctgcaga aggcagcagg cagccctaca cctacgccga ctacgcctac gccgactccg 420  
 actaccccga ctccgacccc gaccggatca gacctgggta aaaagctgct ggaggcagcg 480  
 cgtgccggtc aagacgacga ggttcgcgaa ttgcttaaag cgggtgcaga cgtcaacgcc 540  
 aaagattatt tctctcatac cccgttgcac ttagccgcgc gtaatggcca tctgaagatc 600  
 gtcgaggtcc tcttgaaggc aggcgcggat gtcaatgcga aggattttgc gggcaaaacg 660  
 ccgctgcact tagcggcgaa cgagggtcat ttagaaatcg ttgaagtcct gttaaaagcg 720  
 ggcgccgatg tgaatgcgca ggatattttc ggtaaaacgc cggcggacat tgcggcagat 780

|                                                                    |      |
|--------------------------------------------------------------------|------|
| gcgggtcatg aagatatcgc agaagtcctg cagaaggcag caggttcccc gacccttacg  | 840  |
| ccaacgactc cgacccaac tccaacgacc cctaccccga ccccgaccgg atcagacctg   | 900  |
| ggtaaaaaac tgctgcaagc agcacgtgca ggtcagctgg atgaagtctg tgaactgctg  | 960  |
| aaagcaggcg ccgatgttaa tgcaaaagat agagagggca agaccccgct gcatgtggct  | 1020 |
| gctcaagagg gtcacctgga aattgttgaa gttctgctga aagccggtgc agatgttaat  | 1080 |
| gcaaaagatg tgtggggcag aaccccgtg catctggctg cttggatcgg tcacctggaa   | 1140 |
| attgttgaag ttctgctgaa agccggtgca gatgttaatg caaaagatgt gtctggcgct  | 1200 |
| accccgctgc atgcggctgc tctgcacggt cacctggaaa ttgttgaagt tctgctgaac  | 1260 |
| gccggtgcag atgttaacgc acaggataaa agcggtaaaa cccctgccga tctggcagct  | 1320 |
| cgcgccggtc atcaggatat tgctgaagtg ctgcagaagg cagcaggcag cccacgccca  | 1380 |
| actcctacaa cccccacacc tacaccgacg acgccgacac cgactccaac cggatcagac  | 1440 |
| ctgggtaaaa agttgttact tgcaagctgc gccggccaat tggacgaagt ccgcatttta  | 1500 |
| ctgaaggccg gtgcggatgt gaacgcgaaa gacgtgtttg ggacagcccc tcttcacacc  | 1560 |
| gcagcagttg caggtcatct ggagatcgtg gaagtgcttt taaaagcggg tgcggacgtc  | 1620 |
| aacgctaagg acaaagttgg gtacacgccca ctgcacttag ctgcacagtc aggacatctt | 1680 |
| gagattgtgg aggtcttgct gaaggcaggc gcagatgtga acgctaagga tgtcgttggg  | 1740 |
| gttacgccgg cggatttggc agctttcgag ggacaccagg acattgctga agttctgcag  | 1800 |
| aaggcagcag gttcgccgac cccaaccct accactcaa cgccgacgcc taccactcca    | 1860 |
| acaccaacac caacgggatc accaactcca acaccgacca ccccgacccc taccccaaca  | 1920 |
| ggatcagacc tgggtcaaaa gttgttacac gcggctcaag cgggacaatt agacgaggtc  | 1980 |
| cgtattctgc ttaaagccgg ggctgatgta aatgcaaaag acaaacaggg caacacaccc  | 2040 |
| ttacatatcg cggcattcca tggacatctg gagattgtgg aagtactgct gaaagccggg  | 2100 |
| gcagatgtca acgctaaaga ccaatgggga ttgaccccc ttcatattggc cgctgcctgg  | 2160 |
| ggccatttgg agattgtaga ggtacttctg aaggcggggg ctgatgttaa tgcccaggat  | 2220 |
| aactatgggc aaactcctgc ggatctggcg gctgaatctg ggcaccaaga tattgctgaa  | 2280 |
| gttctgcaga aggcggca                                                | 2298 |

<211> 751  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Multi-specific binding protein

<400> 87

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



<220>

<223> Multi-specific binding protein

<400> 88

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Ser | Gly | Ala | 385 | 390 | 395 | 400 |
| Thr | Pro | Leu | His | Ala | Ala | Ala | Leu | His | Gly | His | Leu | Glu | Ile | Val | Glu | 405 | 410 |     | 415 |
| Val | Leu | Leu | Asn | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Lys | Ser | Gly | 420 | 425 |     | 430 |
| Lys | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Arg | Ala | Gly | His | Gln | Asp | Ile | Ala | 435 | 440 |     | 445 |
| Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | 450 | 455 | 460 |     |
| Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | 465 | 470 | 475 | 480 |
| Leu | Gly | Lys | Lys | Leu | Leu | Leu | Ala | Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | 485 | 490 |     | 495 |
| Val | Arg | Ile | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | 500 | 505 |     | 510 |
| Phe | Gly | Gln | Thr | Pro | Leu | His | Thr | Ala | Ala | Val | Ala | Gly | His | Leu | Glu | 515 | 520 |     | 525 |
| Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | 530 | 535 | 540 |     |
| Lys | Val | Gly | Tyr | Thr | Pro | Leu | His | Leu | Ala | Ala | Gln | Ser | Gly | His | Leu | 545 | 550 | 555 | 560 |
| Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | 565 | 570 |     | 575 |
| Asp | Val | Val | Gly | Val | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | 580 | 585 |     | 590 |
| Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | 595 | 600 | 605 |     |
| Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | 610 | 615 | 620 |     |
| Thr | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | 625 | 630 | 635 | 640 |
| Leu | Leu | His | Ala | Ala | Gln | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Ile | Leu | 645 | 650 |     | 655 |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | 660 | 665 |     | 670 |
| Pro | Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | 675 | 680 |     | 685 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | 690 | 695 | 700 |     |
| Thr | Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | Glu | Ile | Val | Glu | 705 | 710 | 715 | 720 |
| Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | 725 | 730 |     | 735 |
| Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | Gln | Asp | Ile | Ala | 740 | 745 |     | 750 |
| Glu | Val | Leu | Gln | Lys | Ala | Ala |     |     |     |     |     |     |     |     |     | 755 |     |     |     |

<210> 89

<211> 455

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 89

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

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

<210> 90

<211> 463

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 90

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Val | Gly | Val | Thr | Pro | Ala |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Pro | Thr | Pro | Thr | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu | Leu | His | Ala | Ala | Gln | Ala | Gly |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Gln | Leu | Asp | Glu | Val | Arg | Ile | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro | Leu | His | Ile | Ala | Ala | Phe | His |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr | Pro | Leu | His | Leu | Ala | Ala | Ala |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala | Gly | Ala | Asp |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln | Thr | Pro | Ala | Asp | Leu | Ala | Ala |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Glu | Ser | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln | Lys | Ala | Ala |     |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |

<210> 91

<211> 470

<212> PRT

<213> Artificial Sequence

<220>

<223> Multi-specific binding protein

<400> 91

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro |
|     |     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |
| Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Lys | Lys | Leu | Leu | Leu | Ala |
|     |     |     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |
| Ala | Arg | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Ile | Leu | Leu | Lys | Ala | Gly |
|     |     |     |     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |
| Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Phe | Gly | Gln | Thr | Pro | Leu | His | Thr |
|     |     |     |     |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |
| Ala | Ala | Val | Ala | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys | Ala |
|     |     |     |     |     | 225 |     |     |     |     | 230 |     |     |     |     | 235 |
| Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Val | Gly | Tyr | Thr | Pro | Leu | His |
|     |     |     |     |     | 240 |     |     |     |     | 245 |     |     |     |     | 250 |
| Leu | Ala | Ala | Gln | Ser | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu | Leu | Lys |
|     |     |     |     |     | 255 |     |     |     |     | 260 |     |     |     |     | 265 |
| Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Val | Val | Gly | Val | Thr | Pro | Ala |
|     |     |     |     |     | 270 |     |     |     |     | 275 |     |     |     |     | 280 |
| Asp | Leu | Ala | Ala | Phe | Glu | Gly | His | Gln | Asp | Ile | Ala | Glu | Val | Leu | Gln |
|     |     |     |     |     | 285 |     |     |     |     | 290 |     |     |     |     | 295 |
| Lys | Ala | Ala | Gly | Ser | Pro | Thr | Pro | Thr | Pro | Thr | Thr | Pro | Thr | Pro | Thr |
|     |     |     |     |     | 300 |     |     |     |     | 305 |     |     |     |     | 310 |
| Pro | Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Pro | Thr | Pro | Thr | Pro |
|     |     |     |     |     | 315 |     |     |     |     | 320 |     |     |     |     | 325 |
| Thr | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Gly | Ser | Asp | Leu | Gly | Gln | Lys | Leu |
|     |     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |
| Leu | His | Ala | Ala | Gln | Ala | Gly | Gln | Leu | Asp | Glu | Val | Arg | Ile | Leu | Leu |
|     |     |     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |
| Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Lys | Gln | Gly | Asn | Thr | Pro |
|     |     |     |     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |
| Leu | His | Ile | Ala | Ala | Phe | His | Gly | His | Leu | Glu | Ile | Val | Glu | Val | Leu |
|     |     |     |     |     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |
| Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Lys | Asp | Gln | Trp | Gly | Leu | Thr |
|     |     |     |     |     | 385 |     |     |     |     | 390 |     |     |     |     | 395 |
| Pro | Leu | His | Leu | Ala | Ala | Ala | Trp | Gly | His | Leu | Glu | Ile | Val | Glu | Val |
|     |     |     |     |     | 400 |     |     |     |     | 405 |     |     |     |     | 410 |
| Leu | Leu | Lys | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Asp | Asn | Tyr | Gly | Gln |
|     |     |     |     |     | 415 |     |     |     |     | 420 |     |     |     |     | 425 |
| Thr | Pro | Ala | Asp | Leu | Ala | Ala | Glu | Ser | Gly | His | Gln | Asp | Ile | Ala | Glu |
|     |     |     |     |     | 430 |     |     |     |     | 435 |     |     |     |     | 440 |
| Val | Leu | Gln | Lys | Ala | Ala |     |     |     |     | 445 |     |     |     |     | 450 |
|     |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |
|     |     |     |     |     | 470 |     |     |     |     |     |     |     |     |     |     |

<210> 92

<211> 378

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding spike protein binding domain

<400> 92

ggatcagacc tgggtaaaaa gttgttactt gcagctcgcg ccggccaatt ggacgaagtc

60

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cgcattttac tgaaggccgg tgcggatgtg aacgcgaaag acgtgtttgg gcagaccctt | 120 |
| cttcacaccg cagcagttgc aggtcatctg gagatcgtgg aagtgtttt aaaagcgggt  | 180 |
| gcggacgtca acgctaagga caaagttggg tacacgccac tgcacttagc tgcacagtca | 240 |
| ggacatcttg agattgtgga ggtcttgctg aaggcaggcg cagatgtgaa cgctaaggat | 300 |
| gtcgttgggg ttacgccggc ggatttggca gctttcgagg gacaccagga cattgctgaa | 360 |
| gttctgcaga aggcagca                                               | 378 |

<210> 93

<211> 2253

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding multi-specific binding protein

<400> 93

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ggatccgacc tgggtaaaaa gctgctggag gcagcgcgtg ccggtcaaga cgacgaggtt  | 60  |
| cgcgaattgc ttaaagcggg tgcagacgtc aacgccaaag attattttctc tcataccccg | 120 |
| ttgcatttag ccgcgcgtaa tggccatctg aagatcgtcg aggtcctctt gaaggcaggc  | 180 |
| gcggatgtca atgcgaagga ttttgcgggc aaaacgccgc tgcacttagc ggcgaacgag  | 240 |
| ggtcatttag aaatcgttga agtcctgtta aaagcgggcg ccgatgtgaa tgcgcaggat  | 300 |
| attttcggta aaacgccggc ggacattgcg gcagatgcgg gtcatagaaga tatcgagaa  | 360 |
| gtcctgcaga aggcagcagg cagccctaca cctacgccga ctacgcctac gccgactccg  | 420 |
| actaccccga ctccgacccc gaccggatca gacctgggta aaaagctgct ggaggcagcg  | 480 |
| cgtgccggtc aagacgacga ggttcgcgaa ttgcttaaag cgggtgcaga cgtcaacgcc  | 540 |
| aaagattatt tctctcatc cccgttgcatt ttagccgcgc gtaatggcca tctgaagatc  | 600 |
| gtcgagggtc tcttgaaggc aggcgcggat gtcaatgcga aggattttgc gggcaaaacg  | 660 |
| ccgctgcact tagcggcgaa cgagggtcat ttagaaatcg ttgaagtcct gttaaaagcg  | 720 |
| ggcgccgatg tgaatgcgca ggatattttc ggtaaaacgc cggcggacat tgcggcagat  | 780 |
| gcgggtcatg aagatatcgc agaagtcctg cagaaggcag caggttcccc gaccctacg   | 840 |
| ccaacgactc cgacccaac tccaacgacc cctaccccga ccccgaccgg atcagacctg   | 900 |
| ggtaaaaaac tgctgcaagc agcacgtgca ggtcagctgg atgaagtctg tgaactgctg  | 960 |

|                                                                     |      |
|---------------------------------------------------------------------|------|
| aaagcaggcg ccgatgttaa tgcaaaagat agagagggca agaccccgct gcatgtggct   | 1020 |
| gctcaagagg gtcacctgga aattgttgaa gttctgctga aagccggtgc agatgttaat   | 1080 |
| gcaaaagatg tgtggggcag aaccccgctg catctggctg cttggatcgg tcacctggaa   | 1140 |
| attgttgaag ttctgctgaa agccggtgca gatgttaatg caaaagatgt gtctggcgct   | 1200 |
| accccgctgc atgcggctgc tctgcacggt cacctggaaa ttgttgaagt tctgctgaac   | 1260 |
| gccggtgcag atgttaacgc acaggataaa agcggtaaaa cccctgccga tctggcagct   | 1320 |
| cgcgccggtc atcaggatat tgctgaagtg ctgcagaagg cagcaggcag cccacgccca   | 1380 |
| actcctacaa ccccccacacc tacaccgacg acgccgacac cgactccaac cggatcagac  | 1440 |
| ctgggtaaaa agttgttact tgcagctcgc gccggccaat tggacgaagt ccgcatttta   | 1500 |
| ctgaaggccg gtgcgggatgt gaacgcgaaa gacgtgtttg ggacagacccc tcttcacacc | 1560 |
| gcagcagttg caggtcatct ggagatcgtg gaagtgcttt taaaagcggg tgcggacgtc   | 1620 |
| aacgctaagg acaaagttgg gtacacgccca ctgcacttag ctgcacagtc aggacatctt  | 1680 |
| gagattgtgg aggtcttgct gaaggcaggc gcagatgtga acgctaagga tgtcgttggg   | 1740 |
| gttacgccgg cggatttggc agctttcgag ggacaccagg acattgctga agttctgcag   | 1800 |
| aaggcagcag gttcgccgac cccaaccct accactcaa cgccgacgcc taccactcca     | 1860 |
| acaccaacac caacgggatc agacctgggt caaaagttgt tacacgcggc tcaagcggga   | 1920 |
| caattagacg aggtccgtat tctgcttaaa gccggggctg atgtaaatgc aaaagacaaa   | 1980 |
| cagggaaca cacccttaca tatcgcgga ttccatggac atctggagat tgtggaagta     | 2040 |
| ctgctgaaag ccggggcaga tgtcaacgct aaagaccaat ggggattgac ccccttcat    | 2100 |
| ttggccgctg cctggggcca tttggagatt gtagaggtag ttctgaaggc gggggctgat   | 2160 |
| gttaatgccc aggataacta tgggcaaact cctgcggatc tggcggctga atctgggcac   | 2220 |
| caagatattg ctgaagttct gcagaaggcg gca                                | 2253 |

<210> 94

<211> 2277

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding multi-specific binding protein

<400> 94

|                                                                    |      |
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| ggatccgacc tgggtaaaaa gctgctggag gcagcgcgtg ccggtcaaga cgacgaggtt  | 60   |
| cgcggaattgc ttaaagcggg tgcagacgtc aacgccaaag attatttctc tcataccccg | 120  |
| ttgcatttag ccgcgcgtaa tggccatctg aagatcgtcg aggtcctctt gaaggcaggc  | 180  |
| gcggatgtca atgcgaagga ttttgcgggc aaaacgccgc tgcacttagc ggcgaacgag  | 240  |
| ggtcatttag aaatcgttga agtcctgtta aaagcgggcg ccgatgtgaa tgcgcaggat  | 300  |
| attttcggta aaacgccggc ggacattgcg gcagatgcgg gtcatagaaga tatcgagaa  | 360  |
| gtcctgcaga aggagcagg cagccctaca cctacgccga ctacgcctac gccgactccg   | 420  |
| actaccccga ctccgacccc gaccggatca gacctgggta aaaagctgct ggaggcagcg  | 480  |
| cgtgccggtc aagacgacga ggttcgcgaa ttgcttaaag cgggtgcaga cgtcaacgcc  | 540  |
| aaagattatt tctctcatac cccgttgcag ttagccgcgc gtaatggcca tctgaagatc  | 600  |
| gtcgagggtc tcttgaaggc aggcgcggat gtcaatgcga aggattttgc gggcaaaacg  | 660  |
| ccgctgcact tagcggcgaa cgagggtcat ttagaaatcg ttgaagtcct gttaaaagcg  | 720  |
| ggcgccgatg tgaatgcgca ggatattttc ggtaaaacgc cggcggacat tgcggcagat  | 780  |
| gcgggtcatg aagatatcgc agaagtcctg cagaaggcag caggttcccc gaccctacg   | 840  |
| ccaacgactc cgaccccaac tccaacgacc cctaccccga ccccgaccgg atcagacctg  | 900  |
| ggtaaaaaac tgctgcaagc agcacgtgca ggtcagctgg atgaagtctg tgaactgctg  | 960  |
| aaagcaggcg ccgatgttaa tgcaaaagat agagagggca agaccccgct gcatgtggct  | 1020 |
| gctcaagagg gtcacctgga aattgttgaa gttctgctga aagccggtgc agatgttaat  | 1080 |
| gcaaaagatg tgtggggcag aaccccgtg catctggctg cttggatcgg tcacctggaa   | 1140 |
| attgttgaag ttctgctgaa agccggtgca gatgttaatg caaaagatgt gtctggcgct  | 1200 |
| accccgctgc atgcggctgc tctgcacggt cacctggaaa ttgttgaagt tctgctgaac  | 1260 |
| gccggtgcag atgttaacgc acaggataaa agcggtaaaa cccctgccga tctggcagct  | 1320 |
| cgcgccggtc atcaggatat tgctgaagtg ctgcagaagg cagcaggcag cccacgcca   | 1380 |
| actcctacaa cccccacacc tacaccgacg acgccgacac cgactccaac cggatcagac  | 1440 |
| ctgggtaaaa agttgttact tgcagctcgc gccggccaat tggacgaagt ccgcatttta  | 1500 |
| ctgaaggccg gtgcggatgt gaacgcgaaa gacgtgtttg ggcagacccc tcttcacacc  | 1560 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| gcagcagttg caggtcatct ggagatcgtg gaagtgcttt taaaagcggg tgcggacgtc | 1620 |
| aacgctaagg acaaagttgg gtacacgcca ctgcacttag ctgcacagtc aggacatctt | 1680 |
| gagattgtgg aggtcttgct gaaggcaggc gcagatgtga acgctaagga tgtcgttggg | 1740 |
| gttacgccgg cggatttggc agctttcgag ggacaccagg acattgctga agttctgcag | 1800 |
| aaggcagcag gttcgccgac cccaaccct accactcaa cgccgacgcc taccactcca   | 1860 |
| acaccaacac caacgggatc accgaccct accccaacag gatcagacct ggggtcaaaag | 1920 |
| ttgttacacg cggctcaagc gggacaatta gacgaggtcc gtattctgct taaagccggg | 1980 |
| gctgatgtaa atgcaaaaga caaacagggc aacacaccct tacatatcgc ggcattccat | 2040 |
| ggacatctgg agattgtgga agtactgctg aaagccgggg cagatgtcaa cgctaaagac | 2100 |
| caatggggat tgacccccct tcatttggcc gctgcctggg gccatttggg gattgtagag | 2160 |
| gtacttctga aggcgggggc tgatgttaat gccaggata actatgggca aactcctgcg  | 2220 |
| gatctggcgg ctgaatctgg gcaccaagat attgctgaag ttctgcagaa ggcggca    | 2277 |

<210> 95

<211> 1365

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid encoding multi-specific binding protein

<400> 95

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ggatcagacc tgggtaaaaa actgctgcaa gcagcacgtg caggtcagct ggatgaagtt | 60  |
| cgtgaactgc tgaaagcagg cgccgatgtt aatgcaaaag atagagaggg caagaccccg | 120 |
| ctgcatgtgg ctgctcaaga gggtcacctg gaaattgttg aagttctgct gaaagccggt | 180 |
| gcagatgtta atgcaaaaga tgtgtggggc agaaccctgc tgcatctggc tgcttggatc | 240 |
| ggtcacctgg aaattgttga agttctgctg aaagccggtg cagatgttaa tgcaaaagat | 300 |
| gtgtctggcg ctaccccgct gcatcggct gctctgcacg gtcacctgga aattgttgaa  | 360 |
| gttctgctga acgccggtgc agatgttaac gcacaggata aaagcggtaa aaccctgcc  | 420 |
| gatctggcag ctgcgccgg tcatacaggat attgctgaag tgctgcagaa ggcagcaggc | 480 |
| agccccacgc caactcctac aacccccaca cctacaccga cgacgccgac accgactcca | 540 |
| accggatcag acctgggtaa aaagttgtta cttgcagctc gcgccggcca attggacgaa | 600 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| gtccgcattt tactgaaggc cggtgcggat gtgaacgcga aagacgtgtt tgggcagacc | 660  |
| cctcttcaca ccgcagcagt tgcaggtcat ctggagatcg tggaagtgct tttaaaagcg | 720  |
| ggtgcggacg tcaacgctaa ggacaaagtt gggtagacgc cactgcactt agctgcacag | 780  |
| tcaggacatc ttgagattgt ggaggtcttg ctgaaggcag gcgcagatgt gaacgctaag | 840  |
| gatgtcgttg gggttacgcc ggcggatttg gcagctttcg agggacacca ggacattgct | 900  |
| gaagttctgc agaaggcagc aggttcgccg accccaaccc ctaccactcc aacgccgacg | 960  |
| cctaccactc caacaccaac accaacggga tcagacctgg gtcaaaagtt gttacacgcg | 1020 |
| gctcaagcgg gacaattaga cgaggtccgt attctgctta aagccggggc tgatgtaaat | 1080 |
| gcaaaagaca aacagggcaa cacaccctta catatcgcgg cattccatgg acatctggag | 1140 |
| attgtggaag tactgctgaa agccggggca gatgtcaacg ctaaagacca atggggattg | 1200 |
| accccccttc atttggccgc tgcctggggc catttggaga ttgtagaggt acttctgaag | 1260 |
| gcgggggctg atgttaatgc ccaggataac tatgggcaaa ctcctgcgga tctggcggct | 1320 |
| gaatctgggc accaagatat tgctgaagtt ctgcagaagg cggca                 | 1365 |