SEQUENCE LISTING

<110> Merck, Sharp & Dohme Corp.

<120> CTLA4 BINDERS

<130> 24237

<150> 62/257,001
<151> 2015-11-18

<160> 111

<170> PatentIn version 3.5

<210> 1
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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

```
Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Ser Ser
        115


<210>  2
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<400>  2

Gly Gly Thr Phe Ser Phe Tyr Gly Met Gly
1               5                   10


<210>  3
<211>  17
<212>  PRT
<213>  Lama

<400>  3

Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val Lys
1               5                   10                  15


Gly



<210>  4
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<220>
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<222>  (2)..(2)
<223>  X is M or P

<400>  4
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Glu Xaa Ser Gly Ile Ser Gly Trp Asp Tyr
1 5 10

<210> 5
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<213> Lama

<400> 5

Gly Gly Thr Phe Ser Phe Tyr Gly Met Gly
1 5 10

<210> 6
<211> 10
<212> PRT
<213> Lama

<400> 6

Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr
1 5 10

<210> 7
<211> 10
<212> PRT
<213> Lama

<220>
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<222> (2)..(2)
<223> X is M or P

<400> 7

Glu Xaa Ser Gly Ile Ser Gly Trp Asp Tyr
1 5 10

<210> 8
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<400> 8

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Ser Ser
        115
```

<210> 9
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<400> 9

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
```

1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Lys Val Ser Ser
115

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<400> 10

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

```
Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Gln Val Ser Ser
        115


<210>  11
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<400>  11

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
```

50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Lys Ser
115

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<220>
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<400> 12

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Gln Ser
115

<210> 13
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<400> 13

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly

100 105 110

Thr Gln Val Lys Val Ser Ser
115

<210> 14
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<212> PRT
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<223> Humanized lama

<400> 14

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Gln Val Ser Ser
115

<210> 15
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<400> 15

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Lys Ser
        115
```

<210> 16
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<213> Artificial Sequence

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<223> Humanized lama

<400> 16

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Gln Ser
        115
```

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

<220>
<223> Humanized lama

<400> 17

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
```

1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Ser Ser
115

<210> 18
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<212> PRT
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<220>
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<400> 18

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Lys Val Ser Ser
115

<210> 19
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<212> PRT
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<400> 19

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val

50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Gln Val Ser Ser
115

<210> 20
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<212> PRT
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<220>
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<400> 20

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

```
Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
                85                  90                  95


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Lys Ser
        115


<210>  21
<211>  119
<212>  PRT
<213>  Artificial Sequence

<220>
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<400>  21

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
```

100 105 110

Thr Gln Val Thr Val Gln Ser
115

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

<220>
<223> Humanized lama

<400> 22

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 23
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
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<400> 23

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser
        115
```

<210> 24
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 24

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser
        115
```

<210> 25
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 25

```
Asp Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
```

1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 26
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
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<400> 26

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

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

```
Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Ser Ser Ala
        115                 120


<210>  27
<211>  120
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  27

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
```

50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Lys Val Ser Ser Ala
115 120

<210> 28
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
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<400> 28

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Gln Val Ser Ser Ala
        115                 120


<210>  29
<211>  120
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  29

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
```

100 105 110

Thr Gln Val Thr Val Lys Ser Ala
115 120

<210> 30
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 30

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Gln Ser Ala
115 120

<210> 31
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 31

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Lys Val Ser Ser Ala
        115                 120
```

<210> 32
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 32

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Gln Val Ser Ser Ala
        115                 120
```

<210> 33
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<400> 33

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
```

1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Lys Ser Ala
115 120

<210> 34
<211> 120
<212> PRT
<213> Artificial Sequence

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<223> Humanized lama

<400> 34

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

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

```
Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Gln Ser Ala
        115                 120


<210>  35
<211>  120
<212>  PRT
<213>  Artificial Sequence

<220>
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<400>  35

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
```

50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Ser Ser Ala
115 120

<210> 36
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 36

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

```
Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
                85                  90                  95


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Lys Val Ser Ser Ala
        115                 120


<210>  37
<211>  120
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  37

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
```

100 105 110

Thr Gln Val Gln Val Ser Ser Ala
115 120

<210> 38
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 38

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Lys Ser Ala
115 120

<210> 39
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 39

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
1               5                   10                  15


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Gln Val Thr Val Gln Ser Ala
        115                 120
```

<210> 40
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 40

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala
        115                 120
```

<210> 41
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 41

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
```

1 5 10 15

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala
115 120

<210> 42
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 42

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

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

```
Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Gln Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala
        115                 120


<210>  43
<211>  120
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  43

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
```

50 55 60

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

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

Ala Ala Glu Met Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala
115 120

<210> 44
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> His6-FLAG3 Tag

<400> 44

His His His His His His Gly Ala Ala Asp Tyr Lys Asp His Asp Gly
1 5 10 15

Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Gly
20 25 30

Ala Ala

<210> 45
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 45

Val Thr Val Lys Ser
1 5

<210> 46
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 46

Val Thr Val Gln Ser
1 5

<210> 47
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 47

Val Lys Val Ser Ser
1 5

<210> 48
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 48

Val Gln Val Ser Ser
1 5

<210> 49
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X is any sequence of 1-10 natural amino acids

<400> 49

Val Thr Val Lys Ser Xaa
1 5

<210> 50
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X is any sequence of 1-10 natural amino acids

<400> 50

Val Thr Val Gln Ser Xaa
1 5

<210> 51
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X is any sequence of 1-10 natural amino acids

<400> 51

Val Lys Val Ser Ser Xaa
1   5

<210> 52
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X is any sequence of 1-10 natural amino acids

<400> 52

Val Gln Val Ser Ser Xaa
1   5

<210> 53
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 53

Val Thr Val Lys Ser Ala
1   5

<210> 54

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

<220>
<223> C-terminal extender

<400> 54

Val Thr Val Gln Ser Ala
1 5

<210> 55
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 55

Val Lys Val Ser Ser Ala
1 5

<210> 56
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 56

Val Gln Val Ser Ser Ala
1 5

<210> 57
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 57

Val Thr Val Ser Ser
1 5

<210> 58
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X is any sequence of 1-10 natural amino acids

<400> 58

Val Thr Val Ser Ser Xaa
1 5

<210> 59
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal extender

<400> 59

Val Thr Val Ser Ser Ala
1 5

<210> 60
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X is D or E

<400> 60

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 61
<211> 1272
<212> DNA
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 61
gacgtgcaat tggtggagtc tgggggagga gtggtgcagc cgggggggctc tctgagactc 60

tcctgtgcag cctctggtgg caccttcagt ttctatggca tgggctggtt ccgccaggct 120

ccagggaagg agcgcgagtt tgtagcagat attagaacca gtgctggtag gacatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca acagcaagaa cacggtgtat 240

ctgcaaatga acagcctgcg ccctgaggac acggccctgt attactgtgc agcagagcca 300

agtggaataa gtggttggga ctactggggc caggggaccc tggtcacggt ctcctccgga 360

ggcggtgggt caggtggcgg aggcagcggt ggaggaggta gtggcggtgg cggtagtggg 420

ggtggaggca gcggaggcgg aggcagtggg ggcggtggat ccgaggtgca gttggtggag 480

tctgggggag gagtggtgca gccgggggggc tctctgagac tctcctgtgc agcctctggt 540

ggcaccttca gtttctatgg catgggctgg ttccgccagg ctccagggaa ggagcgcgag 600

tttgtagcag atattagaac cagtgctggt aggacatact atgcagactc cgtgaagggc 660

cgattcacca tctccagaga caacagcaag aacacggtgt atctgcaaat gaacagcctg 720

cgccctgagg acacggccct gtattactgt gcagcagagc caagtggaat aagtggttgg 780

gactactggg gccaggggac cctggtcacg gtctcgagcg gaggcggtgg gtcaggtggc 840

ggaggcagcg gtggaggagg tagtggcggt ggcggtagtg ggggtggagg cagcggaggc 900

ggaggcagtg ggggcggtgg ctcagaggta caactagtgg agtctggagg tggcgttgtg 960

caaccgggta acagtctgcg ccttagctgc gcagcgtctg gctttacctt cagctccttt 1020

ggcatgagct gggttcgcca ggctccggga aaaggactgg aatgggtttc gtctattagc 1080

ggcagtggta gcgatacgct ctacgcggac tccgtgaagg gccgtttcac catctcccgc 1140

gataacgcca aaactacact gtatctgcaa atgaatagcc tgcgtcctga agatacggcc 1200

ctgtattact gtactattgg tggctcgtta agccgttctt cacagggtac cctggtcacc 1260

gtctcctcag cg 1272

<210> 62

<211> 424
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 62

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


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


Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
    130                 135                 140


Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
145                 150                 155                 160
```

```
Ser Gly Gly Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
                165                 170                 175


Ala Ala Ser Gly Gly Thr Phe Ser Phe Tyr Gly Met Gly Trp Phe Arg
            180                 185                 190


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


Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
    210                 215                 220


Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu
225                 230                 235                 240


Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Ala Glu Pro Ser Gly
                245                 250                 255


Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
            260                 265                 270


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


Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
    290                 295                 300


Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val
305                 310                 315                 320


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


Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly
            340                 345                 350
```

```
Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr
        355                 360                 365


Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys
    370                 375                 380


Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala
385                 390                 395                 400


Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly
                405                 410                 415


Thr Leu Val Thr Val Ser Ser Ala
            420


<210>  63
<211>  810
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  63
gacgtgcaat tggtggagtc tgggggagga gtggtgcagc cgggggggctc tctgagactc       60

tcctgtgcag cctctggtgg caccttcagt ttctatggca tgggctggtt ccgccaggct      120

ccagggaagg agcgcgagtt tgtagcagat attagaacca gtgctggtag gacatactat      180

gcagactccg tgaagggccg attcaccatc tccagagaca acagcaagaa cacggtgtat      240

ctgcaaatga acagcctgcg ccctgaggac acggccctgt attactgtgc agcagagcca      300

agtggaataa gtggttggga ctactggggc caggggaccc tggtcacggt ctcctccgga      360

ggcggtgggt caggtggcgg aggcagcggt ggaggaggta gtggcggtgg cggtagtggg      420

ggtggaggca gcggaggcgg aggcagtggg ggcggtggat ccgaggtgca gttggtggag      480

tctggaggtg gcgttgtgca accgggtaac agtctgcgcc ttagctgcgc agcgtctggc      540
```

tttaccttca gctcctttgg catgagctgg gttcgccagg ctccgggaaa aggactggaa 600

tgggtttcgt ctattagcgg cagtggtagc gatacgctct acgcggactc cgtgaagggc 660

cgtttcacca tctcccgcga taacgccaaa actacactgt atctgcaaat gaatagcctg 720

cgtcctgaag atacggccct gtattactgt actattggtg gctcgttaag ccgttcttca 780

cagggtaccc tggtcaccgt ctcctcagcg 810

<210> 64
<211> 270
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 64

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

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


Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
    130                 135                 140


Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
145                 150                 155                 160


Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys
                165                 170                 175


Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg
            180                 185                 190


Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser
        195                 200                 205


Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
    210                 215                 220


Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu
225                 230                 235                 240


Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu
                245                 250                 255


Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
            260                 265                 270


<210>  65
<211>  35
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama
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<400> 65

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
20 25 30

Gly Gly Ser
35

<210> 66
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X is L or V

<220>
<221> MISC_FEATURE
<222> (93)..(93)
<223> X is L or V

<400> 66

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Xaa Val Gln Pro Gly Asn
1 5 10 15

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

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

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
    50   55   60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr
            100   105   110

Val Ser Ser Ala
        115

<210> 67
<211> 10
<212> PRT
<213> Lama

<400> 67

Gly Phe Thr Phe Ser Ser Phe Gly Met Ser
1   5   10

<210> 68
<211> 17
<212> PRT
<213> Lama

<400> 68

Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys
1   5   10   15

Gly

<210> 69
<211> 6

<212> PRT
<213> Lama

<400> 69

Gly Gly Ser Leu Ser Arg
1 5

<210> 70
<211> 85
<212> PRT
<213> Saccharomyces cerevisiae

<400> 70

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg
85

<210> 71
<211> 11
<212> PRT
<213> Rattus

<400> 71

Lys Thr Ser Gln Asn Ile Phe Glu Asn Leu Ala

1 5 10

<210> 72
<211> 7
<212> PRT
<213> Rattus

<400> 72

Asn Ala Ser Pro Leu Gln Ala
1 5

<210> 73
<211> 8
<212> PRT
<213> Rattus

<400> 73

His Gln Tyr Tyr Ser Gly Tyr Thr
1 5

<210> 74
<211> 10
<212> PRT
<213> Rattus

<400> 74

Gly Phe Thr Phe Ser Asp Tyr His Met Ala
1 5 10

<210> 75
<211> 17
<212> PRT
<213> Rattus

<400> 75

Ser Ile Thr Leu Asp Ala Thr Tyr Thr Tyr Tyr Arg Asp Ser Val Arg
1 5 10 15

Gly

<210> 76
<211> 10
<212> PRT
<213> Rattus

<400> 76

His Arg Gly Phe Ser Val Trp Leu Asp Tyr
1 5 10

<210> 77
<211> 10
<212> PRT
<213> Rattus

<400> 77

Gly Tyr Ile Phe Thr Asp Tyr Ala Met His
1 5 10

<210> 78
<211> 16
<212> PRT
<213> Rattus

<400> 78

Thr Phe Ile Pro Leu Leu Asp Thr Ser Asp Tyr Asn Gln Asn Phe Lys
1 5 10 15

<210> 79
<211> 11
<212> PRT
<213> Rattus

<400> 79

Met Gly Val Thr His Ser Tyr Val Met Asp Ala
1 5 10

<210> 80

<211> 11
<212> PRT
<213> Rattus

<400> 80

Arg Ala Ser Gln Pro Ile Ser Ile Ser Val His
1 5 10

<210> 81
<211> 7
<212> PRT
<213> Rattus

<400> 81

Phe Ala Ser Gln Ser Ile Ser
1 5

<210> 82
<211> 9
<212> PRT
<213> Rattus

<400> 82

Gln Gln Thr Phe Ser Leu Pro Tyr Thr
1 5

<210> 83
<211> 10
<212> PRT
<213> Mus

<400> 83

Gly Phe Ile Ile Lys Ala Thr Tyr Met His
1 5 10

<210> 84
<211> 17
<212> PRT
<213> Mus

<400> 84

Arg Ile Asp Pro Ala Asn Gly Glu Thr Lys Tyr Asp Pro Lys Phe Gln
1 5 10 15

Val

<210> 85
<211> 7
<212> PRT
<213> Mus

<400> 85

Tyr Ala Trp Tyr Phe Asp Val
1 5

<210> 86
<211> 11
<212> PRT
<213> Mus

<400> 86

Arg Ala Ser Glu Asn Ile Tyr Ser Phe Leu Ala
1 5 10

<210> 87
<211> 7
<212> PRT
<213> Mus

<400> 87

His Ala Lys Thr Leu Ala Glu
1 5

<210> 88
<211> 9
<212> PRT
<213> Mus

<400> 88

Gln His Tyr Tyr Gly Ser Pro Leu Thr
1 5

<210> 89
<211> 447
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized mouse

<400> 89

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

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

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

Gly Gly Ile Asn Pro Ser Asn Gly Gly Thr Asn Phe Asn Glu Lys Phe
50 55 60

Lys Asn Arg Val Thr Leu Thr Thr Asp Ser Ser Thr Thr Thr Ala Tyr
65 70 75 80

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

Ala Arg Arg Asp Tyr Arg Phe Asp Met Gly Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
115 120 125

```
Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro
    210                 215                 220

Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val
225                 230                 235                 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
                245                 250                 255

Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu
            260                 265                 270

Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
        275                 280                 285

Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser
    290                 295                 300

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
305                 310                 315                 320
```

Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile
325 330 335

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
340 345 350

Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
355 360 365

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
370 375 380

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
385 390 395 400

Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg
405 410 415

Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
420 425 430

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

<210> 90
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized mouse

<400> 90

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Lys Gly Val Ser Thr Ser
20 25 30

```
Gly Tyr Ser Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
        35                  40                  45

Arg Leu Leu Ile Tyr Leu Ala Ser Tyr Leu Glu Ser Gly Val Pro Ala
    50                  55                  60

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

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Ser Arg
                85                  90                  95

Asp Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg
            100                 105                 110

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
        115                 120                 125

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
    130                 135                 140

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
145                 150                 155                 160

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
                165                 170                 175

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
            180                 185                 190

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
        195                 200                 205

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 91
<211> 440
<212> PRT
<213> Homo sapiens

<400> 91

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


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


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


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


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


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


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


Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser
        115                 120                 125


Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp
    130                 135                 140


Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr
145                 150                 155                 160
```

```
Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
                165                 170                 175

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys
            180                 185                 190

Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp
        195                 200                 205

Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala
    210                 215                 220

Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
225                 230                 235                 240

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

Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val
            260                 265                 270

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
        275                 280                 285

Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
    290                 295                 300

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly
305                 310                 315                 320

Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
                325                 330                 335

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr
            340                 345                 350
```

```
Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
        355                 360                 365


Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
    370                 375                 380


Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
385                 390                 395                 400


Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe
                405                 410                 415


Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
            420                 425                 430


Ser Leu Ser Leu Ser Leu Gly Lys
        435                 440


<210>  92
<211>  214
<212>  PRT
<213>  Homo sapiens

<400>  92

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1               5                   10                  15


Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
            20                  25                  30


Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35                  40                  45


Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
    50                  55                  60
```

```
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
65                  70                  75                  80


Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Ser Ser Asn Trp Pro Arg
                85                  90                  95


Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210
```

<210> 93
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 93

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150
```

<210> 94
<211> 153
<212> PRT
<213> Artificial Sequence

<220>

<223> Humanized lama

<400> 94

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150
```

<210> 95
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 95

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150
```

<210> 96
<211> 153

<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 96

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150
```

<210> 97
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 97

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150
```

<210> 98
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 98

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140
```

Gly Ala Ala His His His His His His
145 150

<210> 99
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 99

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
115 120 125

Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
130 135 140

```
Gly Ala Ala His His His His His His
145                 150


<210>  100
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  100

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125
```

Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
130 135 140

Gly Ala Ala His His His His His His
145 150

<210> 101
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 101

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
115 120 125

```
Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150


<210>  102
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  102

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110
```

Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
115 120 125

Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
130 135 140

Gly Ala Ala His His His His His His
145 150

<210> 103
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 103

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

```
Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150


<210>  104
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  104

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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


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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
115 120 125

Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
130 135 140

Gly Ala Ala His His His His His His
145 150

<210> 105
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 105

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

```
Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150


<210>  106
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  106

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60


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

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

Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
115 120 125

Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
130 135 140

Gly Ala Ala His His His His His His
145 150

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

<220>
<223> Humanized lama

<400> 107

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

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

Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150


<210>  108
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  108

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
```

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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150


<210>  109
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Humanized lama

<400>  109

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


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


Gly Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
```

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


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


Ala Ala Glu Pro Ser Gly Ile Ser Gly Trp Asp Tyr Trp Gly Gln Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser Ala Ala Ala Asp Tyr Lys Asp His Asp
        115                 120                 125


Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys
    130                 135                 140


Gly Ala Ala His His His His His His
145                 150
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<210> 110
<211> 138
<212> PRT
<213> Homo sapiens

<400> 110

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Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala Ser Ser Arg Gly
1               5                   10                  15


Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly Lys Ala Thr Glu
            20                  25                  30


Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val
        35                  40                  45


Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr Phe Leu Asp Asp
    50                  55                  60
```

```
Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile
65                  70                  75                  80


Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu
                85                  90                  95


Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln
            100                 105                 110


Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser Asp Phe His His
        115                 120                 125


His His His His His His His Gly Gly Gln
    130                 135


<210>  111
<211>  223
<212>  PRT
<213>  Homo sapiens

<400>  111

Met Ala Cys Leu Gly Phe Gln Arg His Lys Ala Gln Leu Asn Leu Ala
1               5                   10                  15


Thr Arg Thr Trp Pro Cys Thr Leu Leu Phe Phe Leu Leu Phe Ile Pro
            20                  25                  30


Val Phe Cys Lys Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala
        35                  40                  45


Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly
    50                  55                  60


Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln
65                  70                  75                  80
```

```
Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr
                85                  90                  95

Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val
            100                 105                 110

Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile
        115                 120                 125

Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly
    130                 135                 140

Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser
145                 150                 155                 160

Asp Phe Leu Leu Trp Ile Leu Ala Ala Val Ser Ser Gly Leu Phe Phe
                165                 170                 175

Tyr Ser Phe Leu Leu Thr Ala Val Ser Leu Ser Lys Met Leu Lys Lys
            180                 185                 190

Arg Ser Pro Leu Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu
        195                 200                 205

Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn
    210                 215                 220
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