

24237WOPCTSEQ
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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<400> 1

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
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<210> 2

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<213> Lama

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

Gly

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 <223> X is M or P

<400> 4

Glu Xaa Ser Gly Ile Ser Gly Trp Asp Tyr
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Gly Gly Thr Phe Ser Phe Tyr Gly Met Gly
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Asp Ile Arg Thr Ser Ala Gly Arg Thr Tyr
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Glu Xaa Ser Gly Ile Ser Gly Trp Asp Tyr

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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
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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

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55

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

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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
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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 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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<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

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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

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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

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<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

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ala Gly Gly
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 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 Ser₈₅ Leu Lys Pro Glu Asp₉₀ Thr Ala Leu Tyr Tyr₉₅ Cys

Ala Ala Glu Met₁₀₀ Ser Gly Ile Ser Gly₁₀₅ Trp Asp Tyr Trp Gly₁₁₀ Gln Gly

Thr Gln Val₁₁₅ Thr Val Ser Ser

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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

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<400> 19

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

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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

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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

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Thr Gln Val Thr Val Lys Ser
115

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

24237WOPCTSEQ

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

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<212> PRT
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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

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<223> Humanized lama

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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 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

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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

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
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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 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
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<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
 Page 14

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

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<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
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<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

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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
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<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

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<400> 32

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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 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

Thr Gln Val Thr Val Lys Ser Ala
115 120

<210> 34
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<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
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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

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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

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<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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ
60

50

55

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

24237WOPCTSEQ

<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

24237WOPCTSEQ

<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

24237WOPCTSEQ

<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

24237WOPCTSEQ

<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 cggggggctc tctgagactc

60

24237WOPCTSEQ

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tcctgtgcag cctctggtgg caccttcagt ttctatggca tgggctgggt cgcaggct 120
ccaggaagg agcgcgagtt tgtagcagat attagaacca gtgctggtag gacatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca acagcaagaa cacggtgtat 240
ctgcaaatga acagcctgcg ccctgaggac acggccctgt attactgtgc agcagagcca 300
agtgaataa gtggttggga ctactggggc caggggaccc tggtcacggt ctctccgga 360
ggcgggtgggt caggtggcgg aggcagcggg ggaggaggtg gtggcgggtg cggtagtggg 420
ggtggaggca gcggaggcgg aggcagtggg ggcgggtggat ccgagggtgca gttggtggag 480
tctgggggag gagtgggtgca gccggggggc tctctgagac tctcctgtgc agcctctggt 540
ggcaccttca gtttctatgg catgggctgg ttccgccagg ctccaggga ggagcgcgag 600
tttgtagcag atattagaac cagtgtggtt aggacatact atgcagactc cgtgaagggc 660
cgattcacca tctccagaga caacagcaag aacacggtgt atctgcaaat gaacagcctg 720
cgccctgagg acacggccct gtattactgt gcagcagagc caagtggaat aagtgggttg 780
gactactggg gccaggggac cctggtcacg gtctcgagcg gaggcgggtg gtcagggtgg 840
ggaggcagcg gtggaggagg tagtggcggg ggcggtagtg ggggtggagg cagcggaggc 900
ggaggcagtg ggggcgggtg ctgagaggta caactagtgg agtctggagg tggcgttgtg 960
caaccgggta acagtctgcg ccttagctgc gcagcgtctg gctttacctt cagctccttt 1020
ggcatgagct gggttcgcca ggctccggga aaaggactgg aatgggtttc gtctattagc 1080
ggcagtggta gcgatacgct ctacgcggac tccgtgaagg gccgtttcac catctccgc 1140
gataacgcca aaactacact gtatctgcaa atgaatagcc tgcgtcctga agatacggcc 1200
ctgtattact gtactattgg tggctcgtaa agccgttctt cacagggtac cctggtcacc 1260
gtctcctcag cg 1272

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<210> 62
 <211> 424
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Humanized lama

<400> 62

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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 tgggtggagtc tgggggagga gtggtgcagc cggggggctc tctgagactc 60
tcctgtgcag cctctggtgg caccttcagt ttctatggca tgggctgggt cgcagggt 120
ccaggaagg agcgcgagtt tgtagcagat attagaacca gtgctggtag gacatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca acagcaagaa cacggtgtat 240
ctgcaaatga acagcctgcg ccctgaggac acggccctgt attactgtgc agcagagcca 300
agtgaataa gtggttggga ctactggggc caggggaccc tggtcacggt ctctccgga 360
ggcgggtgggt caggtggcgg aggcagcggg ggaggaggta gtggcgggtg cggtagtggg 420
ggtggaggca gcggaggcgg aggcagtggg ggcggtggat ccgaggtgca gttggtggag 480
tctggaggtg gcgttggtga accgggtaac agtctgcgcc ttagctgcgc agcgtctggc 540
tttaccttca gtccttttgg catgagctgg gttcgccagg ctccgggaaa aggactggaa 600
tgggtttcgt ctattagcgg cagtggtagc gatacgtctt acgcggactc cgtgaagggc 660
cgtttcacca tctccgcga taacgcaaaa actacactgt atctgcaaat gaatagcctg 720
cgtcctgaag atacggccct gtattactgt actattggtg gctcgttaag ccgttcttca 780
caggtaccc tggtcaccgt ctctcagcg 810

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

24237WOPCTSEQ

<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

24237WOPCTSEQ

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

<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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

<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

24237WOPCTSEQ

<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

24237WOPCTSEQ

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

24237WOPCTSEQ

<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

24237WOPCTSEQ

<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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

<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

24237WOPCTSEQ

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

24237WOPCTSEQ

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

24237WOPCTSEQ

<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

24237WOPCTSEQ

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

24237WOPCTSEQ

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> 110
<211> 138
<212> PRT
<213> Homo sapiens

<400> 110

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

24237WOPCTSEQ

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