

24238WOPCTSEQ
SEQUENCE LISTING

<110> Merck, Sharp & Dohme Corp.

<120> PD1 and/or LAG3 Binders

<130> 24238

<150> 62/257,009

<151> 2015-11-18

<160> 138

<170> PatentIn version 3.5

<210> 1

<211> 119

<212> PRT

<213> Artificial Sequence

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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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

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Ala Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
 85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser

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Ile His Ala Met Gly
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 <222> (4)..(4)
 <223> X is W or V

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

Gly

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 <222> (7)..(7)
 <223> X is W or F

<400> 5

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Asp Lys His Gln Ser Ser Xaa Tyr Asp Tyr
1 5 10

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<400> 6

Gly Ser Ile Ala Ser Ile His Ala Met Gly
1 5 10

<210> 7
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<400> 7

Val Ile Thr Xaa Ser Gly Gly Ile Thr Tyr
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Asp Lys His Gln Ser Ser Xaa Tyr Asp Tyr
1 5 10

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Val Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Lys Val Ser 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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1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
 85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Gln 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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu 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
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
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Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

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

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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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Gln Ser
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<400> 14

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Lys 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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly

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Thr Leu Val Gln Val Ser Ser
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Lys 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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Gln 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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
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<210> 19

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

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<213>	Artificial Sequence

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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 Ser Ile Ala Ser Ile His
20 25 30

24238WOPCTSEQ

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Gln 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 Ser Ile Ala Ser Ile His
20 25 30

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

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

24238WOPCTSEQ

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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 Leu Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Lys Ser
115

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<400> 22

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Gln Ser
115

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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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly

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Thr Leu Val Thr Val Ser Ser
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Asp 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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser Ala
 115 120

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24238WOPCTSEQ

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<400> 26

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Lys Val Ser Ser Ala
115 120

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<400> 27

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

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

24238WOPCTSEQ

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Lys Ser Ala
115 120

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<220>
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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 Ser Ile Ala Ser Ile His
20 25 30

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

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

24238WOPCTSEQ

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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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Gln Ser Ala
115 120

<210> 30

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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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Lys Val Ser Ser Ala
 115 120

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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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly

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Thr Leu Val Gln Val Ser Ser Ala
 115 120

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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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Lys Ser Ala
 115 120

24238WOPCTSEQ

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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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Gln Ser Ala
 115 120

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

24238WOPCTSEQ

<220>

<223> humanized Lama

<400> 34

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala
115 120

<210> 35

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 35

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

24238WOPCTSEQ

1					5					10					15					
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Ser	Ile	Ala	Ser	Ile	His					
			20				25						30							
Ala	Met	Gly	Trp	Phe	Arg	Gln	Ala	Pro	Gly	Lys	Glu	Arg	Glu	Phe	Val					
			35				40						45							
Ala	Val	Ile	Thr	Trp	Ser	Gly	Gly	Ile	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	Gly	Asp	Lys	His	Gln	Ser	Ser	Trp	Tyr	Asp	Tyr	Trp	Gly	Gln	Gly					
			100						105						110					
Thr	Leu	Val	Lys	Val	Ser	Ser	Ala													
			115			120														

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

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<220>
<223> humanized Lama
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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 Ser Ile Ala Ser Ile His
20 25 30

24238WOPCTSEQ

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Gln 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 Ser Ile Ala Ser Ile His
20 25 30

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

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

24238WOPCTSEQ

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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Lys 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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Gln 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 Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly

24238WOPCTSEQ

100

105

110

Thr Leu Val Thr Val Ser Ser Ala
 115 120

<210> 40

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 40

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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser Ala
 115 120

24238WOPCTSEQ

<210> 41
 <211> 34
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HIS6-FLAG3 tag

<400> 41

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> 42
 <211> 5
 <212> PRT
 <213> Lama sp.

<400> 42

Val Thr Val Lys Ser
 1 5

<210> 43
 <211> 5
 <212> PRT
 <213> Lama sp.

<400> 43

Val Thr Val Gln Ser
 1 5

<210> 44
 <211> 5
 <212> PRT

24238WOPCTSEQ

<213> Lama sp.

<400> 44

Val Lys Val Ser Ser
1 5

<210> 45

<211> 5

<212> PRT

<213> Lama sp.

<400> 45

Val Gln Val Ser Ser
1 5

<210> 46

<211> 6

<212> PRT

<213> Lama sp.

<220>

<221> misc_feature

<222> (6)..(6)

<223> Xaa can be any naturally occurring amino acid

<400> 46

Val Thr Val Lys Ser Xaa
1 5

<210> 47

<211> 6

<212> PRT

<213> Lama sp.

<220>

<221> misc_feature

<222> (6)..(6)

<223> Xaa can be any naturally occurring amino acid

<400> 47

24238WOPCTSEQ

Val Thr Val Gln Ser Xaa
1 5

<210> 48
<211> 6
<212> PRT
<213> Lama sp.

<220>
<221> misc_feature
<222> (6)..(6)
<223> Xaa can be any naturally occurring amino acid

<400> 48

Val Lys Val Ser Ser Xaa
1 5

<210> 49
<211> 6
<212> PRT
<213> Lama sp.

<220>
<221> misc_feature
<222> (6)..(6)
<223> Xaa can be any naturally occurring amino acid

<400> 49

Val Gln Val Ser Ser Xaa
1 5

<210> 50
<211> 6
<212> PRT
<213> Lama sp.

<400> 50

Val Thr Val Lys Ser Ala
1 5

24238WOPCTSEQ

<210> 51
 <211> 6
 <212> PRT
 <213> Lama sp.

<400> 51

Val Thr Val Gln Ser Ala
 1 5

<210> 52
 <211> 6
 <212> PRT
 <213> Lama sp.

<400> 52

Val Lys Val Ser Ser Ala
 1 5

<210> 53
 <211> 6
 <212> PRT
 <213> Lama sp.

<400> 53

Val Gln Val Ser Ser Ala
 1 5

<210> 54
 <211> 5
 <212> PRT
 <213> Lama sp.

<400> 54

Val Thr Val Ser Ser
 1 5

<210> 55
 <211> 6

24238WOPCTSEQ

<212> PRT
<213> Lama sp.

<220>
<221> misc_feature
<222> (6)..(6)
<223> Xaa can be any naturally occurring amino acid

<400> 55

Val Thr Val Ser Ser Xaa
1 5

<210> 56
<211> 6
<212> PRT
<213> Lama sp.

<400> 56

Val Thr Val Ser Ser Ala
1 5

<210> 57
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 57

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 Ser Ile Ala Ser Ile His
20 25 30

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

24238WOPCTSEQ

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 58
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> 35GS linker

<400> 58

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> 59
<211> 116
<212> PRT
<213> Artificial Sequence

<220>

24238WOPCTSEQ

<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> 59

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> 60

24238WOPCTSEQ

<211> 10
 <212> PRT
 <213> Lama sp.

<400> 60

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

<210> 61
 <211> 17
 <212> PRT
 <213> Lama sp.

<400> 61

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

Gly

<210> 62
 <211> 6
 <212> PRT
 <213> Lama sp.

<400> 62

Gly Gly Ser Leu Ser Arg
 1 5

<210> 63
 <211> 128
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

<400> 63

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

24238WOPCTSEQ

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu 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 Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 64
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 64

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 Arg Thr Phe Ser Asp Tyr
20 25 30

24238WOPCTSEQ

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

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

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

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

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
 100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 65
 <211> 10
 <212> PRT
 <213> Lama sp.

<400> 65

Gly Arg Thr Phe Ser Asp Tyr Val Met Gly
 1 5 10

<210> 66
 <211> 17
 <212> PRT
 <213> Lama sp.

<220>
 <221> MISC_FEATURE
 <222> (14)..(14)
 <223> X is A or S

<400> 66

24238WOPCTSEQ

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

Gly

<210> 67
<211> 19
<212> PRT
<213> Lama sp.

<400> 67

Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp
1 5 10 15

Tyr Asp Tyr

<210> 68
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 68

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

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

His His

<210> 69
<211> 9
<212> PRT

24238WOPCTSEQ

<213> Artificial Sequence

<220>

<223> HisX6 tag sequence

<400> 69

Ala Ala Ala His His His His His His
1 5

<210> 70

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> 35GS linker

<400> 70

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> 71

<211> 11

<212> PRT

<213> Rattus sp.

<400> 71

Lys Thr Ser Gln Asn Ile Phe Glu Asn Leu Ala
1 5 10

<210> 72

<211> 7

<212> PRT

<213> Rattus sp.

24238WOPCTSEQ

<400> 72

Asn Ala Ser Pro Leu Gln Ala
1 5

<210> 73

<211> 8

<212> PRT

<213> Rattus sp.

<400> 73

His Gln Tyr Tyr Ser Gly Tyr Thr
1 5

<210> 74

<211> 10

<212> PRT

<213> Rattus sp.

<400> 74

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

<210> 75

<211> 17

<212> PRT

<213> Rattus sp.

<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 sp.

24238WOPCTSEQ

<400> 76

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

<210> 77

<211> 10

<212> PRT

<213> Rattus sp.

<400> 77

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

<210> 78

<211> 16

<212> PRT

<213> Rattus sp.

<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 sp.

<400> 79

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

<210> 80

<211> 11

<212> PRT

<213> Rattus sp.

<400> 80

Arg Ala Ser Gln Pro Ile Ser Ile Ser Val His

24238WOPCTSEQ

1 5 10

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

<400> 81

Phe Ala Ser Gln Ser Ile Ser
1 5

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

<400> 82

Gln Gln Thr Phe Ser Leu Pro Tyr Thr
1 5

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

<400> 83

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

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

<400> 84

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

Val

24238WOPCTSEQ

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

<400> 85

Tyr Ala Trp Tyr Phe Asp Val
 1 5

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

<400> 86

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

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

<400> 87

His Ala Lys Thr Leu Ala Glu
 1 5

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

<400> 88

Gln His Tyr Tyr Gly Ser Pro Leu Thr
 1 5

<210> 89

24238WOPCTSEQ

<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

24238WOPCTSEQ

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

24238WOPCTSEQ

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

24238WOPCTSEQ

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

24238WOPCTSEQ

<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

24238WOPCTSEQ

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

24238WOPCTSEQ

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

24238WOPCTSEQ

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> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HisX6 tag

<400> 93

His His His His His His
 1 5

<210> 94

24238WOPCTSEQ

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

<220>
 <223> HisX18 tag

<400> 94

His	His	His	His	His	His	His	His	His	His	His	His	His	His	His	His
1				5					10					15	

His His

<210> 95
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

<400> 95

Asp	Tyr	Lys	Asp	Asp	Asp	Lys
1					5	

<210> 96
 <211> 279
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

<400> 96

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	Arg	Thr	Phe	Ser	Asp	Tyr
			20					25					30		

24238WOPCTSEQ

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

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

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

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

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
145 150 155 160

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
165 170 175

Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
180 185 190

Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
195 200 205

Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala
210 215 220

24238WOPCTSEQ

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr
225 230 235 240

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu
245 250 255

Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr
260 265 270

Leu Val Thr Val Ser Ser Ala
275

<210> 97

<211> 442

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 97

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 Arg Thr Phe Ser Asp Tyr
20 25 30

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

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

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

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

24238WOPCTSEQ

85

90

95

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
 100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 145 150 155 160

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 165 170 175

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe
 180 185 190

Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg
 195 200 205

Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala
 210 215 220

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 225 230 235 240

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu
 245 250 255

Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro
 260 265 270

Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr

24238WOPCTSEQ

275

280

285

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 305 310 315 320

Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly
 325 330 335

Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
 340 345 350

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
 355 360 365

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
 370 375 380

Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
 385 390 395 400

Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp
 405 410 415

Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
 420 425 430

Gln Gly Thr Leu Val Thr Val Ser Ser Ala
 435 440

<210> 98

<211> 119

<212> PRT

<213> Artificial Sequence

24238WOPCTSEQ

<220>

<223> humanized Lama

<400> 98

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 99

<211> 119

<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

24238WOPCTSEQ

1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser
 115

<210> 100
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 20GS linker

<400> 100

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

Gly Gly Gly Ser
 20

24238WOPCTSEQ

<210> 101
 <211> 270
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

<400> 101

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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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

24238WOPCTSEQ

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> 102
<211> 424
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 102

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 Ser Ile Ala Ser Ile His
 20 25 30

24238WOPCTSEQ

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg
180 185 190

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

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

24238WOPCTSEQ

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 Gly Asp Lys His Gln
245 250 255

Ser Ser Trp Tyr 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

24238WOPCTSEQ

Thr Leu Val Thr Val Ser Ser Ala
420

<210> 103
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 103

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 104

24238WOPCTSEQ

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

<220>
 <223> humanized Lama

<400> 104

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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser
 115

<210> 105
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

24238WOPCTSEQ

<400> 105

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 106

<211> 749

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 106

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

24238WOPCTSEQ

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
165 170 175

Ala Ala Ser Gly Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg
180 185 190

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

24238WOPCTSEQ

Gly Gly Ile 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 Ile Tyr Tyr Cys Ala Gly Asp Lys His Gln
245 250 255

Ser Ser Trp Tyr 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 Leu Val
305 310 315 320

Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr
325 330 335

Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Arg Gly Asn Glu
340 345 350

Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr
355 360 365

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

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

24238WOPCTSEQ

Val Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala
405 410 415

Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val
420 425 430

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
435 440 445

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
450 455 460

Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
465 470 475 480

Gly Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
485 490 495

Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Arg
500 505 510

Gly Asn Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg
515 520 525

Thr His Tyr Ala Asp Ala Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
530 535 540

Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu
545 550 555 560

Asp Thr Ala Val Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser
565 570 575

Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly
580 585 590

24238WOPCTSEQ

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
595 600 605

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
610 615 620

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
625 630 635 640

Ser Gly Gly Gly Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys
645 650 655

Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg
660 665 670

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser
675 680 685

Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
690 695 700

Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu
705 710 715 720

Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu
725 730 735

Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser
740 745

<210> 107

<211> 750

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

24238WOPCTSEQ

<400> 107

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg

24238WOPCTSEQ

180

185

190

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

Gly Gly Ile 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 Gly Asp Lys His Gln
245 250 255

Ser Ser Trp Tyr 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 Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr
325 330 335

Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu
340 345 350

Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr
355 360 365

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys

24238WOPCTSEQ

370

375

380

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

Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala
 405 410 415

Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val
 420 425 430

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 435 440 445

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 450 455 460

Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 465 470 475 480

Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 485 490 495

Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro
 500 505 510

Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg
 515 520 525

Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 530 535 540

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu
 545 550 555 560

Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser

24238WOPCTSEQ

565

570

575

Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly
 580 585 590

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 595 600 605

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 610 615 620

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
 625 630 635 640

Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys
 645 650 655

Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg
 660 665 670

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser
 675 680 685

Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
 690 695 700

Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu
 705 710 715 720

Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu
 725 730 735

Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
 740 745 750

<210> 108

24238WOPCTSEQ

<211> 690
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

<400> 108

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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Glu Val Gln Leu Val
 130 135 140

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

24238WOPCTSEQ

Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe
165 170 175

Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Val Ile Thr Trp
180 185 190

Ser Gly Gly Ile Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr
195 200 205

Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser
210 215 220

Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Gly Asp Lys His
225 230 235 240

Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
245 250 255

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
260 265 270

Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly
275 280 285

Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
290 295 300

Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro Gly
305 310 315 320

Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr
325 330 335

His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
340 345 350

24238WOPCTSEQ

Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp
355 360 365

Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu
370 375 380

Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr
385 390 395 400

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
405 410 415

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
420 425 430

Ser Gly Gly Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
435 440 445

Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg
450 455 460

Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser
465 470 475 480

Gly Gly Arg Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
485 490 495

Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
500 505 510

Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp
515 520 525

Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp
530 535 540

24238WOPCTSEQ

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
545 550 555 560

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
565 570 575

Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu
580 585 590

Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met
595 600 605

Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser
610 615 620

Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly
625 630 635 640

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln
645 650 655

Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile
660 665 670

Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser
675 680 685

Ser Ala
690

<210> 109
<211> 646
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

24238WOPCTSEQ

<400> 109

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
145 150 155 160

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

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

24238WOPCTSEQ

180

185

190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr
 195 200 205

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
 210 215 220

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
 225 230 235 240

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 260 265 270

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

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
 290 295 300

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
 305 310 315 320

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 325 330 335

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
 340 345 350

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
 355 360 365

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser

24238WOPCTSEQ

370

375

380

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
 385 390 395 400

Gly Gly Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala
 405 410 415

Ala Ser Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln
 420 425 430

Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly
 435 440 445

Gly Arg Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
 450 455 460

Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
 465 470 475 480

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp
 485 490 495

Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly
 500 505 510

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 515 520 525

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro
 530 535 540

Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser
 545 550 555 560

Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu

24238WOPCTSEQ

565

570

575

Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp
 580 585 590

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr
 595 600 605

Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr
 610 615 620

Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu
 625 630 635 640

Val Thr Val Ser Ser Ala
 645

<210> 110

<211> 433

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 110

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 Ser Ile Ala Ser Ile His
 20 25 30

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

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

24238WOPCTSEQ

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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg
180 185 190

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

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

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

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

24238WOPCTSEQ

Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp
 260 265 270

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 275 280 285

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

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

Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg
 325 330 335

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser
 340 345 350

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile
 355 360 365

Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg
 370 375 380

Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met
 385 390 395 400

Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly
 405 410 415

Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser
 420 425 430

Ala

24238WOPCTSEQ

<210> 111
 <211> 403
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> humanized Lama

<400> 111

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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Glu Val Gln Leu Val
 130 135 140

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

24238WOPCTSEQ

145		150		155		160									
Cys	Ala	Ala	Ser	Gly	Arg	Thr	Phe	Ser	Asp	Tyr	Val	Met	Gly	Trp	Phe
				165					170					175	
Arg	Gln	Ala	Pro	Gly	Lys	Glu	Arg	Glu	Phe	Val	Ala	Ala	Ile	Ser	Glu
			180					185					190		
Ser	Gly	Gly	Arg	Thr	His	Tyr	Ala	Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr
			195				200					205			
Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser
	210					215					220				
Leu	Arg	Pro	Glu	Asp	Thr	Ala	Leu	Tyr	Tyr	Cys	Ala	Thr	Thr	Leu	Leu
225					230					235					240
Trp	Trp	Thr	Ser	Glu	Tyr	Ala	Pro	Ile	Lys	Ala	Asn	Asp	Tyr	Asp	Tyr
				245					250					255	
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser
			260					265					270		
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu
		275					280					285			
Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Asn	Ser
	290					295					300				
Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Phe	Gly
305					310					315					320
Met	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ser
				325					330					335	
Ser	Ile	Ser	Gly	Ser	Gly	Ser	Asp	Thr	Leu	Tyr	Ala	Asp	Ser	Val	Lys

24238WOPCTSEQ

340

345

350

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu
355 360 365

Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr
370 375 380

Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val
385 390 395 400

Ser Ser Ala

<210> 112
<211> 381
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 112

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr
145 150 155 160

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
195 200 205

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
210 215 220

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
225 230 235 240

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
245 250 255

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
260 265 270

24238WOPCTSEQ

Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala
275 280 285

Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln
290 295 300

Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly
305 310 315 320

Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
325 330 335

Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
340 345 350

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser
355 360 365

Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
370 375 380

<210> 113
<211> 750
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 113

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 Ser Ile Ala Ser Ile His
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val

24238WOPCTSEQ

35

40

45

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr 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 Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg
 180 185 190

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

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

Ser Arg Asp Pro Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu

24238WOPCTSEQ

225		230		235		240
Arg	Pro	Glu	Asp	Thr	Ala	Gln
				245		255
Ser	Ser	Phe	Tyr	Asp	Tyr	Gln
						265
Ser	Gly	Gly	Gly	Gly	Ser	Gly
						280
Gly	Gly	Gly	Gly	Ser	Gly	Gly
						295
Gly	Gly	Gly	Ser	Glu	Val	Gln
						310
Gln	Pro	Gly	Gly	Ser	Leu	Arg
						325
Phe	Ser	Asp	Tyr	Val	Met	Gly
						340
Arg	Glu	Phe	Val	Ala	Ala	Ile
						355
Ala	Asp	Ser	Val	Lys	Gly	Arg
						370
Asn	Thr	Leu	Tyr	Leu	Gln	Met
						385
Leu	Tyr	Tyr	Cys	Ala	Thr	Thr
						405
Pro	Ile	Lys	Ala	Asn	Asp	Tyr
						410

24238WOPCTSEQ

420

425

430

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
435 440 445

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
450 455 460

Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
465 470 475 480

Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
485 490 495

Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro
500 505 510

Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg
515 520 525

Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
530 535 540

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu
545 550 555 560

Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser
565 570 575

Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly
580 585 590

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
595 600 605

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser

24238WOPCTSEQ

610

615

620

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
625 630 635 640

Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys
645 650 655

Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg
660 665 670

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser
675 680 685

Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
690 695 700

Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu
705 710 715 720

Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu
725 730 735

Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
740 745 750

<210> 114

<211> 646

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 114

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

24238WOPCTSEQ

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
145 150 155 160

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

Ala Val Ile Thr Val Ser Gly Gly Ile Thr Tyr Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Pro Ser Lys Asn Thr Val Tyr
195 200 205

24238WOPCTSEQ

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
 210 215 220

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
 225 230 235 240

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 260 265 270

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

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
 290 295 300

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
 305 310 315 320

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 325 330 335

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
 340 345 350

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
 355 360 365

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 370 375 380

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
 385 390 395 400

24238WOPCTSEQ

Gly Gly Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala
405 410 415

Ala Ser Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln
420 425 430

Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly
435 440 445

Gly Arg Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
450 455 460

Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
465 470 475 480

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp
485 490 495

Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly
500 505 510

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
515 520 525

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro
530 535 540

Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser
545 550 555 560

Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
565 570 575

Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp
580 585 590

24238WOPCTSEQ

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr
595 600 605

Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr
610 615 620

Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu
625 630 635 640

Val Thr Val Ser Ser Ala
645

<210> 115
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 115

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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

24238WOPCTSEQ

85

90

95

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr 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 Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg
 180 185 190

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

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

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

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

Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp
 260 265 270

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly

24238WOPCTSEQ

275

280

285

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

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

Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg
 325 330 335

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser
 340 345 350

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile
 355 360 365

Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg
 370 375 380

Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met
 385 390 395 400

Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly
 405 410 415

Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser
 420 425 430

Ala

<210> 116

<211> 381

<212> PRT

<213> Artificial Sequence

24238WOPCTSEQ

<220>

<223> humanized Lama

<400> 116

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr
145 150 155 160

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

24238WOPCTSEQ

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
195 200 205

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
210 215 220

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
225 230 235 240

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
245 250 255

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
260 265 270

Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala
275 280 285

Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln
290 295 300

Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly
305 310 315 320

Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
325 330 335

Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
340 345 350

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser
355 360 365

24238WOPCTSEQ

Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
370 375 380

<210> 117
<211> 750
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 117

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr 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

24238WOPCTSEQ

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 Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg
 180 185 190

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

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

Ser Arg Asp Gln 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 Gly Asp Lys His Gln
 245 250 255

Ser Ser Phe Tyr 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 Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr

24238WOPCTSEQ

325

330

335

Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu
 340 345 350

Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr
 355 360 365

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

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

Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala
 405 410 415

Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val
 420 425 430

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 435 440 445

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 450 455 460

Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 465 470 475 480

Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 485 490 495

Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro
 500 505 510

Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg

24238WOPCTSEQ

515

520

525

Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 530 535 540

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu
 545 550 555 560

Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser
 565 570 575

Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly
 580 585 590

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 595 600 605

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 610 615 620

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
 625 630 635 640

Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys
 645 650 655

Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg
 660 665 670

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser
 675 680 685

Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
 690 695 700

Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu

24238WOPCTSEQ

705 710 715 720

Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu
725 730 735

Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
740 745 750

<210> 118
<211> 646
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 118

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

24238WOPCTSEQ

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
145 150 155 160

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

Ala Val Ile Thr Val Ser Gly Gly Ile Thr Tyr Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Gln Ser Lys Asn Thr Val Tyr
195 200 205

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
210 215 220

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
225 230 235 240

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
260 265 270

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

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
290 295 300

24238WOPCTSEQ

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
305 310 315 320

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
325 330 335

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
340 345 350

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
355 360 365

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
370 375 380

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
385 390 395 400

Gly Gly Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala
405 410 415

Ala Ser Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln
420 425 430

Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly
435 440 445

Gly Arg Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
450 455 460

Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
465 470 475 480

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp
485 490 495

24238WOPCTSEQ

Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly
500 505 510

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
515 520 525

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro
530 535 540

Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser
545 550 555 560

Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
565 570 575

Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp
580 585 590

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr
595 600 605

Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr
610 615 620

Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu
625 630 635 640

Val Thr Val Ser Ser Ala
645

<210> 119
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

24238WOPCTSEQ

<400> 119

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr 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 Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg

24238WOPCTSEQ

180

185

190

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

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

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

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

Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp
 260 265 270

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 275 280 285

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

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

Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg
 325 330 335

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser
 340 345 350

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile
 355 360 365

Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg

24238WOPCTSEQ

370

375

380

Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met
385 390 395 400

Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly
405 410 415

Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser
420 425 430

Ala

<210> 120

<211> 381

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 120

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr
145 150 155 160

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
195 200 205

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
210 215 220

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
225 230 235 240

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
245 250 255

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
260 265 270

24238WOPCTSEQ

Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala
275 280 285

Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln
290 295 300

Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly
305 310 315 320

Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
325 330 335

Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
340 345 350

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser
355 360 365

Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
370 375 380

<210> 121
<211> 750
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 121

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 Ser Ile Ala Ser Ile His
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val

24238WOPCTSEQ

35

40

45

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr 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 Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg
 180 185 190

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

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

Ser Arg Asp Ser Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu

24238WOPCTSEQ

225		230		235		240
Arg	Pro	Glu	Asp	Thr	Ala	Gln
				245		255
Ser	Ser	Phe	Tyr	Asp	Tyr	Gln
				260		270
Ser	Gly	Gly	Gly	Gly	Ser	Gly
				275		285
Gly	Gly	Gly	Gly	Ser	Gly	Gly
				290		300
Gly	Gly	Gly	Ser	Glu	Val	Gln
305				310		315
Gln	Pro	Gly	Gly	Ser	Leu	Arg
				325		335
Phe	Ser	Asp	Tyr	Val	Met	Gly
				340		345
Arg	Glu	Phe	Val	Ala	Ala	Ile
				355		360
Ala	Asp	Ser	Val	Lys	Gly	Arg
				370		375
Asn	Thr	Leu	Tyr	Leu	Gln	Met
385				390		395
Leu	Tyr	Tyr	Cys	Ala	Thr	Thr
				405		410
Pro	Ile	Lys	Ala	Asn	Asp	Tyr

24238WOPCTSEQ

420

425

430

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 435 440 445

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 450 455 460

Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 465 470 475 480

Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 485 490 495

Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Pro
 500 505 510

Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg
 515 520 525

Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 530 535 540

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu
 545 550 555 560

Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser
 565 570 575

Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly
 580 585 590

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 595 600 605

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser

24238WOPCTSEQ

610

615

620

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
625 630 635 640

Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys
645 650 655

Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg
660 665 670

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser
675 680 685

Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
690 695 700

Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu
705 710 715 720

Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu
725 730 735

Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
740 745 750

<210> 122

<211> 646

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized Lama

<400> 122

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

24238WOPCTSEQ

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
145 150 155 160

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
165 170 175

Ala Val Ile Thr Val Ser Gly Gly Ile Thr Tyr Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Ser Ser Lys Asn Thr Val Tyr
195 200 205

24238WOPCTSEQ

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
210 215 220

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
225 230 235 240

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
260 265 270

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

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
290 295 300

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
305 310 315 320

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
325 330 335

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
340 345 350

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
355 360 365

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
370 375 380

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
385 390 395 400

24238WOPCTSEQ

Gly Gly Gly Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala
 405 410 415

Ala Ser Gly Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg Gln
 420 425 430

Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Ala Ile Ser Glu Ser Gly
 435 440 445

Gly Arg Thr His Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
 450 455 460

Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
 465 470 475 480

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp
 485 490 495

Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly
 500 505 510

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 515 520 525

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro
 530 535 540

Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser
 545 550 555 560

Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
 565 570 575

Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp
 580 585 590

24238WOPCTSEQ

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr
595 600 605

Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr
610 615 620

Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu
625 630 635 640

Val Thr Val Ser Ser Ala
645

<210> 123
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized Lama

<400> 123

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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

24238WOPCTSEQ

85

90

95

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr 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 Arg Thr Phe Ser Asp Tyr Val Met Gly Trp Phe Arg
 180 185 190

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

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

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

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

Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala Asn Asp Tyr Asp Tyr Trp
 260 265 270

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly

24238WOPCTSEQ

275

280

285

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

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

Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg
325 330 335

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser
340 345 350

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile
355 360 365

Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg
370 375 380

Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met
385 390 395 400

Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly
405 410 415

Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser
420 425 430

Ala

<210> 124

<211> 381

<212> PRT

<213> Artificial Sequence

24238WOPCTSEQ

<220>

<223> humanized Lama

<400> 124

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 Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

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

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr
 145 150 155 160

Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
 165 170 175

24238WOPCTSEQ

Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala Asp Ser Val
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
195 200 205

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
210 215 220

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
225 230 235 240

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
245 250 255

Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
260 265 270

Gly Gly Gly Val Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala
275 280 285

Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln
290 295 300

Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly
305 310 315 320

Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
325 330 335

Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
340 345 350

Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser
355 360 365

24238WOPCTSEQ

Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala
 370 375 380

<210> 125
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 9GS linker

<400> 125

Gly Gly Gly Gly Ser Gly Gly Gly Ser
 1 5

<210> 126
 <211> 423
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Humanized lama

<400> 126

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
 20 25 30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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

24238WOPCTSEQ

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

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr 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 Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
165 170 175

Ala Ala Ser Gly Ser Ile Ala Ser Ile His Ala Met Gly Trp Phe Arg
180 185 190

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

Gly Gly Ile 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 Ile Tyr Tyr Cys Ala Gly Asp Lys His Gln
245 250 255

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

24238WOPCTSEQ

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 Leu 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

Val 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
420

<210> 127

<211> 441

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanized lama

24238WOPCTSEQ

<400> 127

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 Arg Thr Phe Ser Asp Tyr
20 25 30

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu 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 Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
145 150 155 160

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
165 170 175

Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe

24238WOPCTSEQ

180

185

190

Ser Asp Tyr Val Met Gly Trp Phe Arg Gln Ala Arg Gly Asn Glu Arg
 195 200 205

Glu Phe Val Ala Ala Ile Ser Glu Ser Gly Gly Arg Thr His Tyr Ala
 210 215 220

Asp Ala Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
 225 230 235 240

Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val
 245 250 255

Tyr Tyr Cys Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro
 260 265 270

Ile Lys Ala Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 275 280 285

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 305 310 315 320

Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly
 325 330 335

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
 340 345 350

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
 355 360 365

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr

24238WOPCTSEQ

370

375

380

Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
 385 390 395 400

Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp
 405 410 415

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
 420 425 430

Gln Gly Thr Leu Val Thr Val Ser Ser
 435 440

<210> 128

<211> 162

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanized lama

<400> 128

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 Arg Thr Phe Ser Asp Tyr
 20 25 30

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

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

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

24238WOPCTSEQ

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

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

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

Ile Asp Tyr Lys Asp Asp Asp Asp Lys Gly Ala Ala His His His His
145 150 155 160

His His

<210> 129
<211> 137
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 129

Asp 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 Arg Thr Phe Ser Asp Tyr
20 25 30

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

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

24238WOPCTSEQ

50

55

60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu 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 Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

Ala Ala Ala His His His His His His
130 135

<210> 130

<211> 162

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanized lama

<400> 130

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 Arg Thr Phe Ser Asp Tyr
20 25 30

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

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

24238WOPCTSEQ

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

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

Ala Thr Thr Leu Leu Trp Trp Thr Ser Glu Tyr Ala Pro Ile Lys Ala
100 105 110

Asn Asp Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

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

Ile Asp Tyr Lys Asp Asp Asp Asp Lys Gly Ala Ala His His His His
145 150 155 160

His His

<210> 131
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized lama

<400> 131

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Ile Ala Ser Ile His
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val

24238WOPCTSEQ

35

40

45

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Ile Tyr Tyr Cys
85 90 95

Ala Gly Asp Lys His Gln Ser Ser Trp Tyr 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> 132

<211> 153

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanized lama

<400> 132

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 Ser Ile Ala Ser Ile His
20 25 30

24238WOPCTSEQ

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr 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> 133
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized Lama

<400> 133

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 Ser Ile Ala Ser Ile His

24238WOPCTSEQ

20

25

30

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

Ala Val Ile Thr Trp Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Trp Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser His His His His His His
115 120 125

<210> 134

<211> 128

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanized Lama

<400> 134

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 Ser Ile Ala Ser Ile His
20 25 30

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

24238WOPCTSEQ

Ala Val Ile Thr Val Ser Gly Gly Ile 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 Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ala Ala His His His His His His
115 120 125

<210> 135
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized Lama

<400> 135

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 Ser Ile Ala Ser Ile His
20 25 30

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

Ala Val Ile Thr Val Ser Gly Gly Ile 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

24238WOPCTSEQ

65		70		75		80									
Leu	Gln	Met	Asn	Ser	Leu	Arg	Pro	Glu	Asp	Thr	Ala	Leu	Tyr	Tyr	Cys
			85						90					95	
Ala	Gly	Asp	Lys	His	Gln	Ser	Ser	Phe	Tyr	Asp	Tyr	Trp	Gly	Gln	Gly
			100					105					110		
Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ala	Ala	His	His	His	His	His	His
		115					120					125			
<210> 136															
<211> 128															
<212> PRT															
<213> Artificial Sequence															
<220>															
<223> Humanized Lama															
<400> 136															
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	Ser	Ile	Ala	Ser	Ile	His
			20					25					30		
Ala	Met	Gly	Trp	Phe	Arg	Gln	Ala	Pro	Gly	Lys	Glu	Arg	Glu	Phe	Val
		35					40					45			
Ala	Val	Ile	Thr	Val	Ser	Gly	Gly	Ile	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	

24238WOPCTSEQ

Ala Gly Asp Lys His Gln Ser Ser Phe Tyr Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ala Ala His His His His His His
 115 120 125

<210> 137
 <211> 288
 <212> PRT
 <213> Homo sapiens

<400> 137

Met Gln Ile Pro Gln Ala Pro Trp Pro Val Val Trp Ala Val Leu Gln
 1 5 10 15

Leu Gly Trp Arg Pro Gly Trp Phe Leu Asp Ser Pro Asp Arg Pro Trp
 20 25 30

Asn Pro Pro Thr Phe Ser Pro Ala Leu Leu Val Val Thr Glu Gly Asp
 35 40 45

Asn Ala Thr Phe Thr Cys Ser Phe Ser Asn Thr Ser Glu Ser Phe Val
 50 55 60

Leu Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala
 65 70 75 80

Ala Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg
 85 90 95

Val Thr Gln Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg
 100 105 110

Ala Arg Arg Asn Asp Ser Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu
 115 120 125

24238WOPCTSEQ

Ala Pro Lys Ala Gln Ile Lys Glu Ser Leu Arg Ala Glu Leu Arg Val
130 135 140

Thr Glu Arg Arg Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro
145 150 155 160

Arg Pro Ala Gly Gln Phe Gln Thr Leu Val Val Gly Val Val Gly Gly
165 170 175

Leu Leu Gly Ser Leu Val Leu Leu Val Trp Val Leu Ala Val Ile Cys
180 185 190

Ser Arg Ala Ala Arg Gly Thr Ile Gly Ala Arg Arg Thr Gly Gln Pro
195 200 205

Leu Lys Glu Asp Pro Ser Ala Val Pro Val Phe Ser Val Asp Tyr Gly
210 215 220

Glu Leu Asp Phe Gln Trp Arg Glu Lys Thr Pro Glu Pro Pro Val Pro
225 230 235 240

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

Met Gly Thr Ser Ser Pro Ala Arg Arg Gly Ser Ala Asp Gly Pro Arg
260 265 270

Ser Ala Gln Pro Leu Arg Pro Glu Asp Gly His Cys Ser Trp Pro Leu
275 280 285

<210> 138

<211> 525

<212> PRT

<213> Homo sapiens

<400> 138

Met Trp Glu Ala Gln Phe Leu Gly Leu Leu Phe Leu Gln Pro Leu Trp

24238WOPCTSEQ

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

24238WOPCTSEQ

195

200

205

Gly Arg Val Pro Val Arg Glu Ser Pro His His His Leu Ala Glu Ser
 210 215 220

Phe Leu Phe Leu Pro Gln Val Ser Pro Met Asp Ser Gly Pro Trp Gly
 225 230 235 240

Cys Ile Leu Thr Tyr Arg Asp Gly Phe Asn Val Ser Ile Met Tyr Asn
 245 250 255

Leu Thr Val Leu Gly Leu Glu Pro Pro Thr Pro Leu Thr Val Tyr Ala
 260 265 270

Gly Ala Gly Ser Arg Val Gly Leu Pro Cys Arg Leu Pro Ala Gly Val
 275 280 285

Gly Thr Arg Ser Phe Leu Thr Ala Lys Trp Thr Pro Pro Gly Gly Gly
 290 295 300

Pro Asp Leu Leu Val Thr Gly Asp Asn Gly Asp Phe Thr Leu Arg Leu
 305 310 315 320

Glu Asp Val Ser Gln Ala Gln Ala Gly Thr Tyr Thr Cys His Ile His
 325 330 335

Leu Gln Glu Gln Gln Leu Asn Ala Thr Val Thr Leu Ala Ile Ile Thr
 340 345 350

Val Thr Pro Lys Ser Phe Gly Ser Pro Gly Ser Leu Gly Lys Leu Leu
 355 360 365

Cys Glu Val Thr Pro Val Ser Gly Gln Glu Arg Phe Val Trp Ser Ser
 370 375 380

Leu Asp Thr Pro Ser Gln Arg Ser Phe Ser Gly Pro Trp Leu Glu Ala

24238WOPCTSEQ

385		390		395		400
Gln	Glu	Ala	Gln	Leu	Leu	Gln
			405			410
						415
Gln	Glu	Ala	Gln	Leu	Leu	Gln
			405			410
						415
Gly	Glu	Arg	Leu	Leu	Gly	Ala
			420			425
						430
Gly	Glu	Arg	Leu	Leu	Gly	Ala
			420			425
						430
Pro	Gly	Ala	Gln	Arg	Ser	Gly
			435			440
						445
Pro	Gly	Ala	Gln	Arg	Ser	Gly
			435			440
						445
His	Leu	Leu	Leu	Phe	Leu	Ile
			450			455
						460
His	Leu	Leu	Leu	Phe	Leu	Ile
			450			455
						460
Val	Thr	Gly	Ala	Phe	Gly	Phe
			465			470
						475
Val	Thr	Gly	Ala	Phe	Gly	Phe
			465			470
						475
Arg	Arg	Phe	Ser	Ala	Leu	Glu
			485			490
						495
Arg	Arg	Phe	Ser	Ala	Leu	Glu
			485			490
						495
Ser	Lys	Ile	Glu	Glu	Leu	Glu
			500			505
						510
Ser	Lys	Ile	Glu	Glu	Leu	Glu
			500			505
						510
Glu	Pro	Glu	Pro	Glu	Pro	Glu
			515			520
						525
Glu	Pro	Glu	Pro	Glu	Pro	Glu
			515			520
						525