Figure 1A

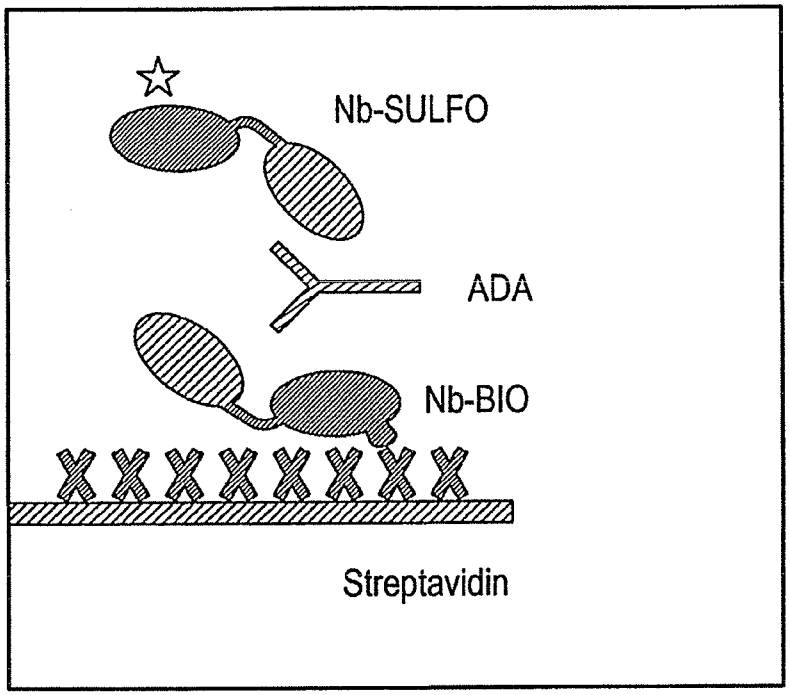


Figure 1B

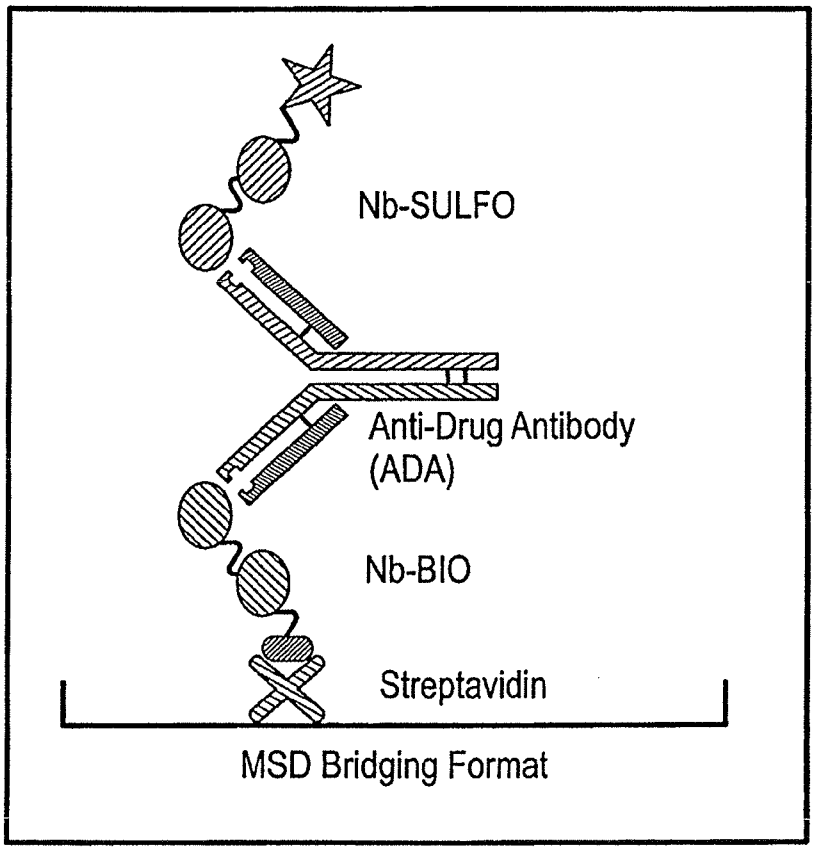

Nb-SULFO
Anti-Drug Antibody
(ADA)
Nb-BIO
Streptavidin
MSD Bridging Format

Figure 1C

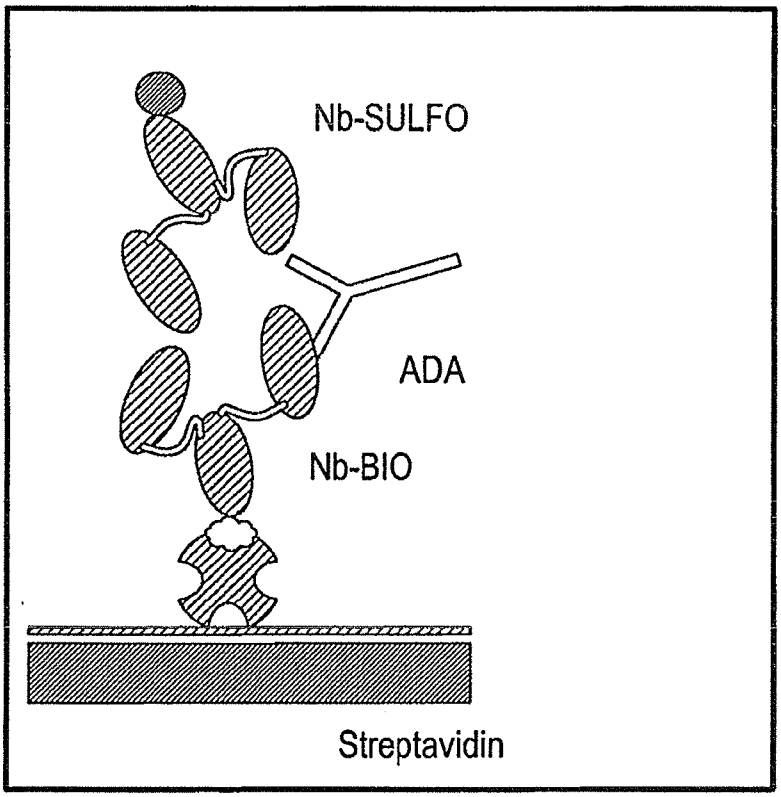


Figure 2

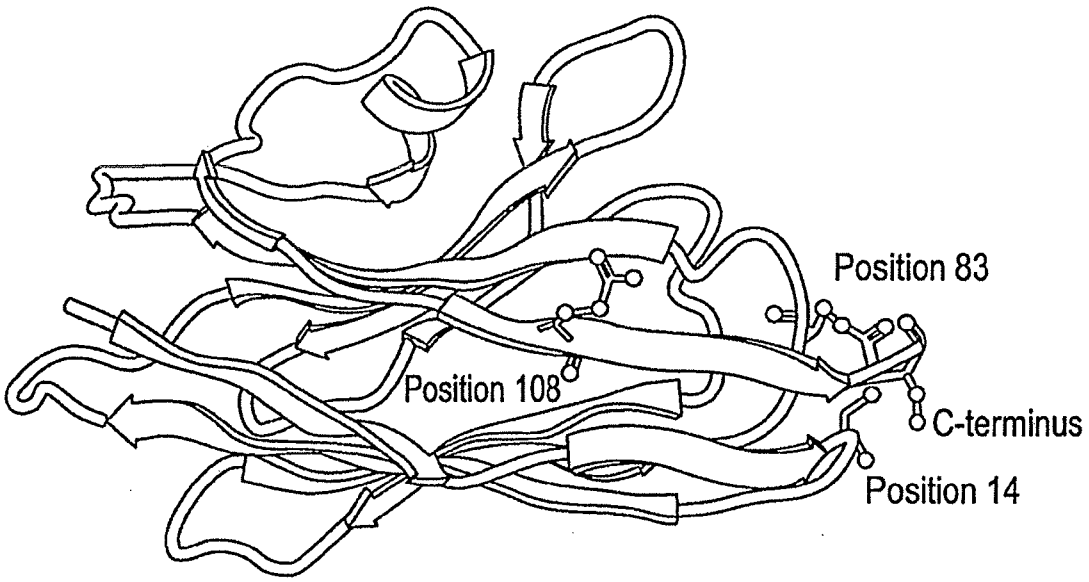


Figure 3

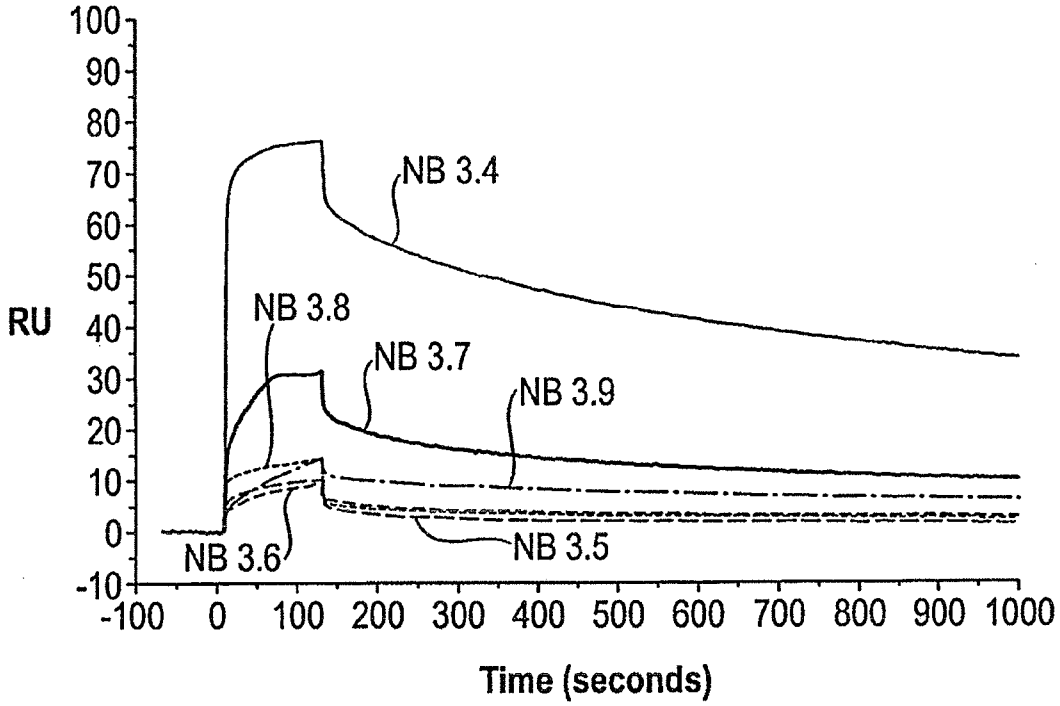

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90
80
70
60
50
40
30
20
10
0
-10
RU
NB 3.4
NB 3.8
NB 3.7
NB 3.9
NB 3.6
NB 3.5
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0
100
200
300
400
500
600
700
800
900
1000
Time (seconds)

Figure 4

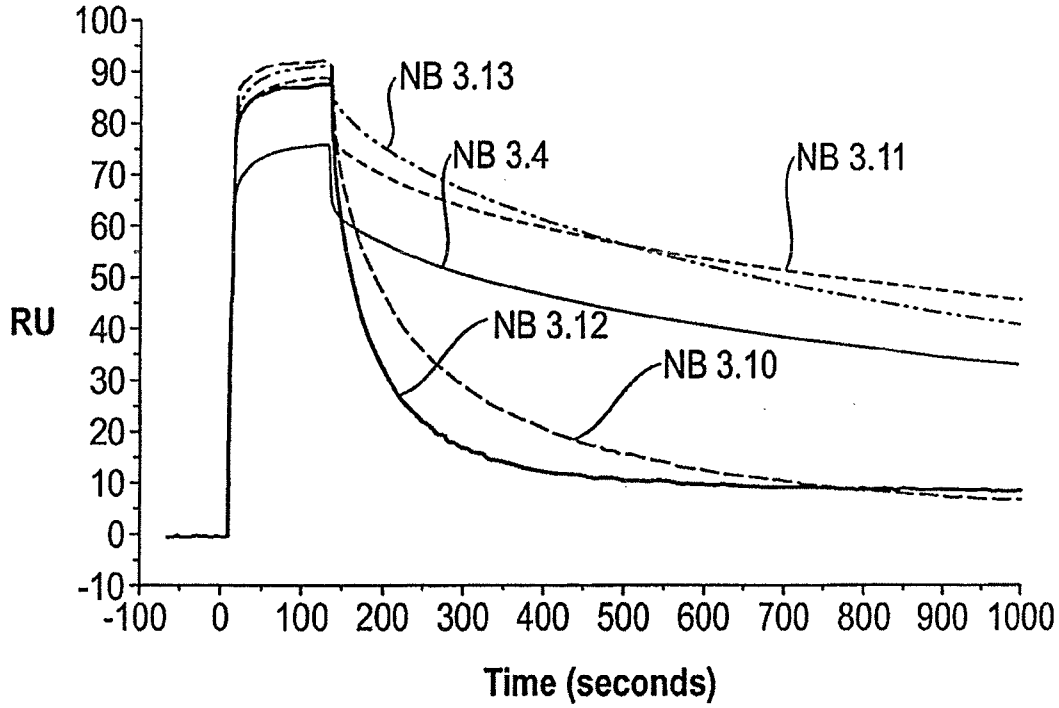

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800
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Time (seconds)
NB 3.13
NB 3.4
NB 3.11
NB 3.12
NB 3.10

Figure 5

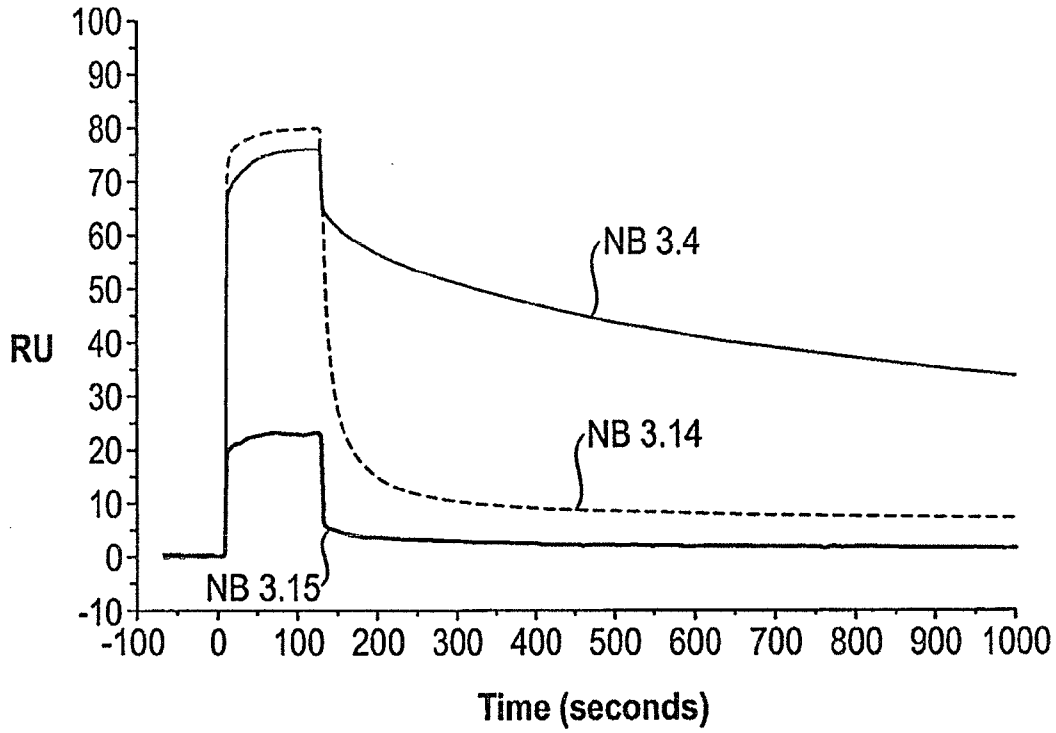

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NB 3.4
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Time (seconds)

Figure 6

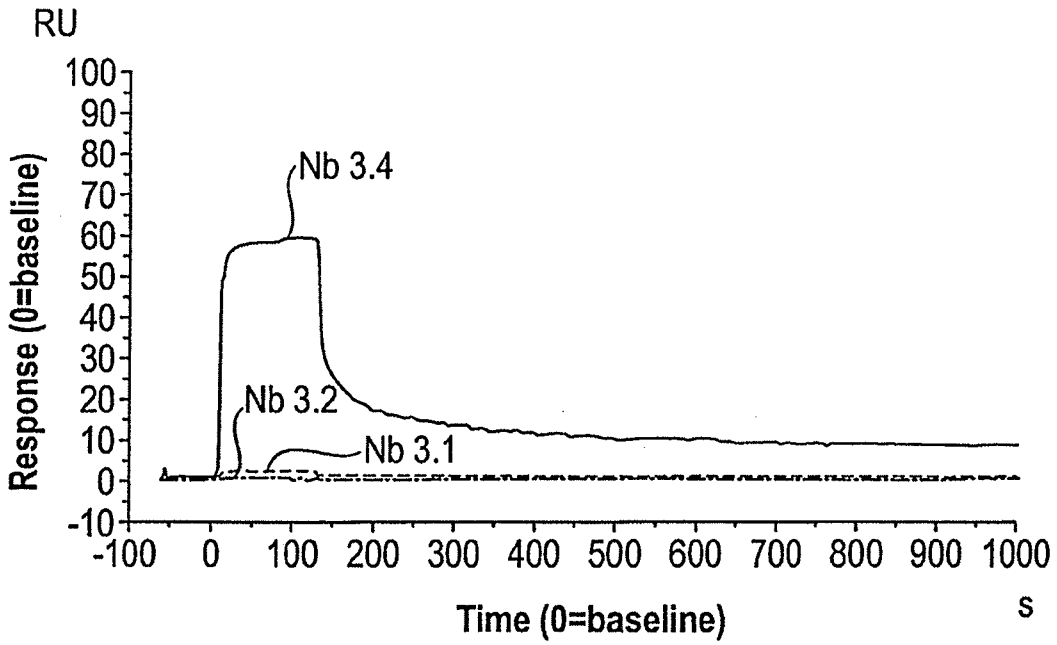

RU
Response (0=baseline)
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90
80
70
60
50
40
30
20
10
0
-10
Nb 3.4
Nb 3.2
Nb 3.1
-100
0
100
200
300
400
500
600
700
800
900
1000
Time (0=baseline)
s

Figure 7

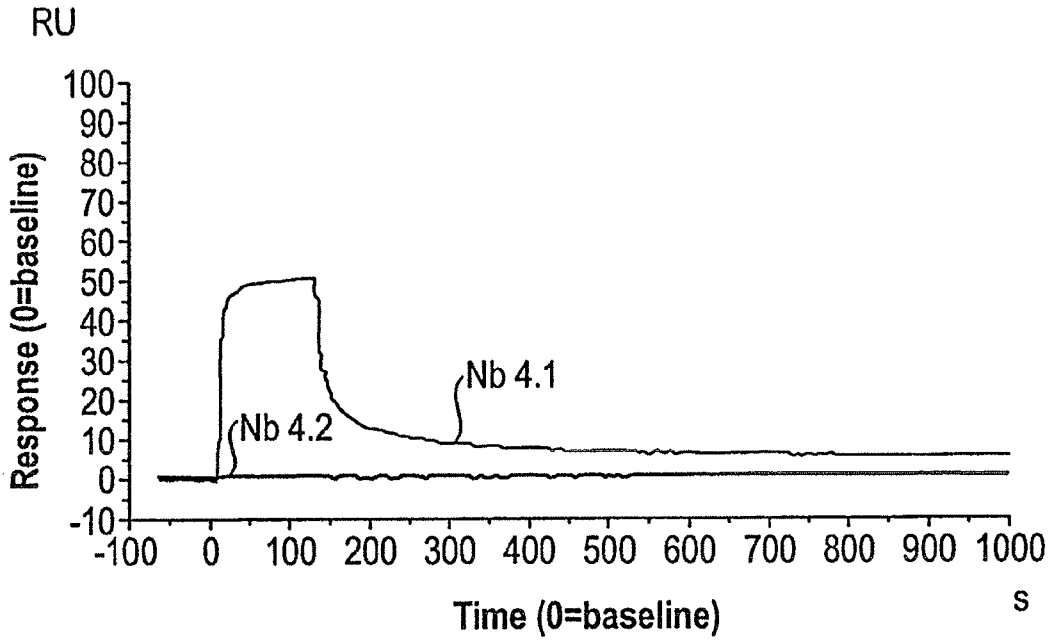

RU
Response (0=baseline)
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80
70
60
50
40
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20
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0
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-100
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600
700
800
900
1000
Nb 4.1
Nb 4.2
Time (0=baseline)
s

Figure 8

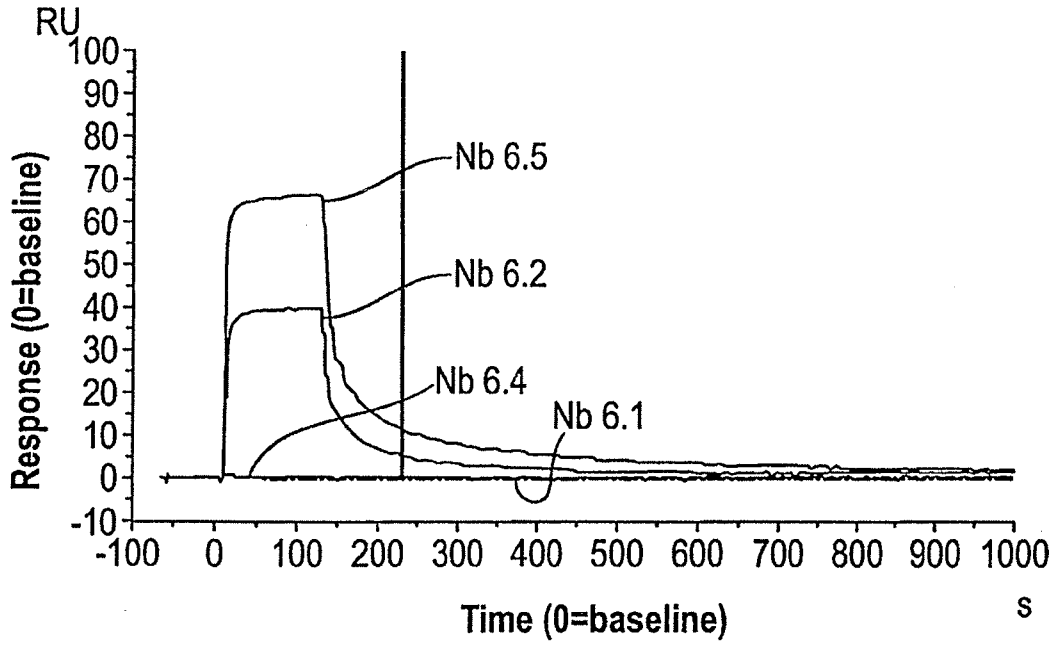

RU
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80
70
60
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30
20
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-10
Response (0=baseline)
Nb 6.5
Nb 6.2
Nb 6.4
Nb 6.1
-100
0
100
200
300
400
500
600
700
800
900
1000
Time (0=baseline)
s

Figure 9

SEQ ID NO	N-terminal amino acid(s)	Mutations in the C-terminal region	Sequence	Reference sequence
37	A	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSA	SEQ ID NO: 37 without the added C-terminal amino acid residues
38	A	none	EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYAMSWVR QAPGKGLEWVSGIKSSGDSTRYAGSVKGRFTISRDNAKN TLYLQMNSLRPEDTAVYYCAKSRVSRTGLYTYDNRGQG TLVTVSSGGGGSGGGGSGGGGSGGGGSEVQLVESGGGL VQPGGSLRLSCAASGRTFNNYAMGWFRQAPGKEREFVA AITRSGVRSGVSAIYGDSVKDRFTISRDNAKNTLYLQMN SLRPEDTAVYYCAASAIGSGALRRFEYDYSGQGTLVTVS SA	SEQ ID NO: 38 without the added C-terminal amino acid residues
39	A	none	EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYPMGWFR QAPGKGREFVSSITGSGGSTYYADSVKGRFTISRDNAKN TLYLQMNSLRPEDTAVYYCAAYIRPDTYLSRDYRKYDY WGQGTLVTVSSGGGGSGGGSEVQLVESGGGLVQPGNSL RLSCAASGFTFSSFGMSWVRQAPGKGLEWVSSISGSGSD TLYADSVKGRFTISRDNAKTTLYLQMNSLRPEDTAVYY CTIGGSLSRSSQGTLVTVSSGGGGSGGGSEVQLVESGGG LVQPGGSLRLSCAASGFTFSSYPMGWFRQAPGKGREFVS SITGSGGSTYYADSVKGRFTISRDNAKNTLYLQMNSLRP EDTAVYYCAAYIRPDTYLSRDYRKYDYWGQGTLVTVSS A	SEQ ID NO: 39 without the added C-terminal amino acid residues

40	A	none	EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYWMYWV RQAPGKGLEWVSEINTNGLITKYPDSVKGRFTISRDNAK NTLYLQMNSLRPEDTAVYYCARSPSGFNRGQGTLVTVS SGGGGSGGGSEVQLVESGGGLVQPGNSLRLSCAASGFTF SSFGMSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGR FTISRDNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQ GTLVTVSSGGGGSGGGSEVQLVESGGGLVQPGGSLRLS CAASGFTFSDYWMYWVRQAPGKGLEWVSEINTNGLITK YPDSVKGRFTISRDNAKNTLYLQMNSLRPEDTAVYYCA RSPSGFNRGQGTLVTVSSA	SEQ ID NO: 40 without the added C-terminal amino acid residues
41	A	none	EVQLVESGGGLVQPGGSLRLSCAASGSVFKINVMAWYR QAPGKGRELVAGIISGGSTSYADSVKGRFTISRDNAKNT LYLQMNSLRPEDTAVYYCAFITTESDYDLGRRYWGQGT LVTVSSGGGGSGGGSEVQLVESGGGLVQPGNSLRLSCA ASGFTFSSFGMSWVRQAPGKGLEWVSSISGSGSDTLYAD SVKGRFTISRDNAKTTLYLQMNSLRPEDTAVYYCTIGGS LSRSSQGTLVTVSSA	SEQ ID NO: 41 without the added C-terminal amino acid residues
42	A	none	EVQLVESGGGLVQPGGSLRLSCAASGRTFSYNPMGWFR QAPGKGRELVAAISRTGGSTYYPDSVEGRFTISRDNAKR MVYLQMNSLRAEDTAVYYCAAAGVRAEDGRVRTLPSE YTFWGQGTQVTVSSAAAEVQLVESGGGLVQPGGSLRLS CAASGRTFSYNPMGWFRQAPGKGRELVAAISRTGGSTY YPDSVEGRFTISRDNAKRMVYLQMNSLRAEDTAVYYCA AAGVRAEDGRVRTLPSEYTFWGQGTQVTVSSA	SEQ ID NO: 42 without the added C-terminal amino acid residues

43	A	none	DVQLVESGGGLVQPGGSLRLSCAASGFILDYYAIGWFRQ APGKEREGVLCIDASDDITYYADSVKGRFTISRDNSKNT VYLQMNSLRPEDTAVYYCATPIGLSSSCLLEYDYDYWG QGTLVTVSSGGGGSGGGSEVQLLESGGGLVQPGGSLRLS CAASGFTFRSFGMSWVRQAPGKGPEWVSSISGSGSDTLY ADSVKGRFTISRDNSKNTLYLQMNSLRPEDTAVYYCTIG GSLSRSSQGTLVTVSSA	SEQ ID NO: 43 without the added C-terminal amino acid residues
44	A	none	DVQLVESGGGLVQPGGSLRLSCAASRSIGRLDRMGWYR HRPGEPRELVATITGGSSINYGDSVKGRFTISIDNSKNTV YLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQGTLVTV SSGGGGSGGGSEVQLVESGGGLVQPGNSLRLSCAASGFT FSSFGMSWVRQAPGKGLEWVSSISGSGSDTLYADSVKG RFTISRDNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSS QGTLVTVSSGGGGSGGGSEVQLVESGGGLVQPGGSLRL SCAASRSIGRLDRMGWYRHRPGEPRELVATITGGSSINY GDSVKGRFTISIDNSKNTVYLQMNSLRPEDTAVYYCNFN KYVTSRDTWGQGTLVTVSSA	SEQ ID NO: 44 without the added C-terminal amino acid residues
45	none	P14A, P41T, S62F, S74A, S82bN, R83K, L108Q	EVQLVESGGGLVQAGGSLRLSCAASRSIGRLDRMGWYR HRTGEPRELVATITGGSSINYGDFVKGRFTISIDNAKNTV YLQMNNLKPEDTAVYYCNFNKYVTSRDTWGQGTQVTV SS	SEQ ID NO: 45 without the added C-terminal amino acid residues and without the mentioned mutations in the C-terminal region
46	AAEQKLIS EEDLNGA AHHHHH H	A14P, T41P, F62S, A74S, N82bS, K83R, Q108L	EVQLVESGGGLVQAGGSLRLSCAASRSIGRLDRMGWYR HRTGEPRELVATITGGSSINYGDFVKGRFTISIDNAKNTV YLQMNNLKPEDTAVYYCNFNKYVTSRDTWGQGTQVTV SSAAAHHHHHHGAAEQKLISEEDLNGAA	SEQ ID NO: 46 without the added C-terminal amino acid residues and without the mentioned mutations in the C-terminal region

47	GGGGSGG GSRDWDF DVFGGGT PVGG	none	EVQLVESGGGLVQPGGSLRLSCAASGSVFKINVMAWYR QAPGKGRELVAGIISGGSTSYADSVKGRFTISRDNAKNT LYLQMNSLRPEDTAVYYCAFITTESDYDLGRRYWGQGT LVTVSSGGGGSGGGSRDWDFDVFGGGTPVGG	SEQ ID NO: 47 without the added C-terminal amino acid residues
48	AAEQKLIS EEDLNGA AHHHHH H	none	EVQLVESGGGLVQPGGSLRLSCIASGLPFSTKSMGWFRQ APGKEREFVARISPGGTSRYYGDFVKGRFAISRDNAKNT TWLQMNSLKAEDTAVYYCASGERSTYIGSNYYRTNEYD YWGTGTQVTVSSAAAEQKLISEEDLNGAAHHHHHH	SEQ ID NO: 48 without the added C-terminal amino acid residues
49	AAEQKLIS EEDLNGA AHHHHH H	V5L, I23A, E44G, A49S, A68T, A74S, T78L, W79Y, K83R, T110Q, Q108L	EVQLLESGGGLVQPGGSLRLSCAASGLPFSTKSMGWFR QAPGKGREFVSRISPGGTSRYYGDFVKGRFTISRDNSKN TLYLQMNSLRAEDTAVYYCASGERSTYIGSNYYRTNEY DYWGQGTLVTVSSAAAEQKLISEEDLNGAAHHHHHH	SEQ ID NO: 49 without the added C-terminal amino acid residues and without the mentioned mutations in the C-terminal region
50	none	L11S	HHHHHHEVQLVESGGGSVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSS	SEQ ID NO: 50 without the mentioned mutations in the C-terminal region
51	none	T110Q	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV QVSS	SEQ ID NO: 51 without the mentioned mutations in the C-terminal region

52	none	S112G	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVGS	SEQ ID NO: 52 without the mentioned mutations in the C-terminal region
53	none	S113G	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSG	SEQ ID NO: 53 without the mentioned mutations in the C-terminal region
54	none	L11S, T110Q, S112G, S113G	HHHHHHEVQLVESGGGSVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV QVGG	SEQ ID NO: 54 without the mentioned mutations in the C-terminal region
55	A	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSA	SEQ ID NO: 55 without the added C-terminal amino acid residues
56	G	S113G	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSGG	SEQ ID NO:56 without the added C-terminal amino acid residues and without the mentioned mutations in the C-terminal region
57	AS	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSAS	SEQ ID NO:57 without the added C-terminal amino acid residues
58	AST	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSAST	SEQ ID NO:58 without the added C-terminal amino acid residues

59	ASTK	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSASTK	SEQ ID NO:59 without the added C-terminal amino acid residues
60	ASP	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSASP	SEQ ID NO:60 without the added C-terminal amino acid residues
61	AP	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSAP	SEQ ID NO:61 without the added C-terminal amino acid residues
62	APT	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSAPT	SEQ ID NO:62 without the added C-terminal amino acid residues
63	W	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSW	SEQ ID NO:63 without the added C-terminal amino acid residues
64	L	none	HHHHHHEVQLVESGGGLVQPGNSLRLSCAASGFTFSSFG MSWVRQAPGKGLEWVSSISGSGSDTLYADSVKGRFTISR DNAKTTLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLV TVSSL	SEQ ID NO:64 without the added C-terminal amino acid residues
65	none	P14A	HHHHHHEVQLVESGGGLVQAGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSS	SEQ ID NO:65 without the mentioned mutations in the C-terminal region

66	none	L11S	HHHHHHEVQLVESGGGSVQPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVTVSS	SEQ ID NO:66 without the mentioned mutations in the C-terminal region
67	none	R83K	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLKPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSS	SEQ ID NO:67 without the mentioned mutations in the C-terminal region
68	none	P14A, L108Q	HHHHHHEVQLVESGGGLVQAGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTQVTVSS	SEQ ID NO:68 without the mentioned mutations in the C-terminal region
69	none	L108Q	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTQVTVSS	SEQ ID NO:69 without the mentioned mutations in the C-terminal region
70	none	T110Q	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVQVSS	SEQ ID NO:70 without the mentioned mutations in the C-terminal region
71	none	S113G	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSG	SEQ ID NO:71 without the mentioned mutations in the C-terminal region
72	none	S112G, S113G	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVGG	SEQ ID NO:72 without the mentioned mutations in the C-terminal region

73	G	S112G, S113G	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVGGG	SEQ ID NO:73 without the added C-terminal amino acid residues and without the mentioned mutations in the C-terminal region
74	G	none	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSSG	SEQ ID NO:74 without the added C-terminal amino acid residues
75	AA	none	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSSAA	SEQ ID NO:75 without the added C-terminal amino acid residues
76	GGG	none	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSSGGG	SEQ ID NO:76 without the added C-terminal amino acid residues
77	A	none	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSSA	SEQ ID NO:77 without the added C-terminal amino acid residues
78	none	Q13R	HHHHHHEVQLVESGGGLVRPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVTVSS	SEQ ID NO:78 without the mentioned mutations in the C-terminal region
79	GG	none	HHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVTVSSGG	SEQ ID NO:79 without the added C-terminal amino acid residues

80	none	T110Q, S112G, S113G	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVQVGG	SEQ ID NO:80 without the mentioned mutations in the C-terminal region
81	none	L11V	HHHHHHEVQLVESGGGVVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSS	SEQ ID NO:81 without the mentioned mutations in the C-terminal region
82	none	P84A	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRAEDTAVYYCNFNKYVTSRDTWGQ GTLVTVSS	SEQ ID NO:82 without the mentioned mutations in the C-terminal region
83	none	T87A	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDAAVYYCNFNKYVTSRDTWGQ GTLVTVSS	SEQ ID NO:83 without the mentioned mutations in the C-terminal region
84	none	S112G	HHHHHHEVQLVESGGGLVQPGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVTVGS	SEQ ID NO:84 without the mentioned mutations in the C-terminal region
85	none	L11S, T110Q, S112G, S113G	HHHHHHEVQLVESGGGSVQPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVQVGG	SEQ ID NO:85 without the mentioned mutations in the C-terminal region
86	none	L11S, T110Q	HHHHHHEVQLVESGGGSVQPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVQVSS	SEQ ID NO:86 without the mentioned mutations in the C-terminal region

87	none	L11S, S112G, S113G	HHHHHHEVQLVESGGGSVQPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVTVGG	SEQ ID NO:87 without the mentioned mutations in the C-terminal region
88	A	L11S, T110Q	HHHHHHEVQLVESGGGSVQPGGSLRLSCAASRSIGRLDR MGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISIDN SKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQG TLVQVSSA	SEQ ID NO:88 without the added C-terminal amino acid residues and without the mentioned mutations in the C-terminal region
89	none	L11S, P14A, T110Q, S112G, S113G	HHHHHHEVQLVESGGGSVQAGGSLRLSCAASRSIGRLD RMGWYRHRPGEPRELVATITGGSSINYGDSVKGRFTISID NSKNTVYLQMNSLRPEDTAVYYCNFNKYVTSRDTWGQ GTLVQVGG	SEQ ID NO:89 without the mentioned mutations in the C-terminal region

SEQUENCE LISTING

<110> Ablynx N.V.

<120> TECHNIQUES FOR PREDICTING, DETECTING AND REDUCING ASPECIFIC PROTEIN INTERFERENCE IN ASSAYS INVOLVING IMMUNOGLOBULIN SINGLE VARIABLE DOMAINS

<130> P011-08-PCT

<160> 89

<170> PatentIn version 3.5

<210> 1
<211> 270
<212> PRT
<213> -

<400> 1

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

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

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

Ser Gly Ile Lys Ser Ser Gly Asp Ser Thr Arg Tyr Ala Gly Ser 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 Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Lys Ser Arg Val Ser Arg Thr Gly Leu Tyr Thr Tyr Asp Asn Arg
            100                 105                 110

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
    130                 135                 140

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

Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Asn Asn Tyr Ala Met
                165                 170                 175

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

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

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

Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr
225                 230                 235                 240

Tyr Cys Ala Ala Ser Ala Ile Gly Ser Gly Ala Leu Arg Arg Phe Glu
                245                 250                 255

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

<210> 2
<211> 385
<212> PRT
<213> -

<400> 2

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

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

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

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

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

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

Ala Ala Tyr Ile Arg Pro Asp Thr Tyr Leu Ser Arg Asp Tyr Arg Lys
            100                 105                 110

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

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

Gly Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser
145                 150                 155                 160
```

Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro
165 170 175

Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp
180 185 190

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

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

Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser
225 230 235 240

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

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

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
275 280 285

Ser Ser Tyr Pro Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg
290 295 300

Glu Phe Val Ser Ser Ile Thr Gly Ser Gly Gly Ser Thr Tyr Tyr Ala
305 310 315 320

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

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

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

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

Ser
385

<210> 3
<211> 117
<212> PRT
<213> -

<400> 3

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 Arg Ser Ile Gly Arg Leu Asp
20 25 30

Arg Met Gly Trp Tyr Arg His Arg Thr Gly Glu Pro Arg Glu Leu Val
35 40 45

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Phe Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser
115

<210> 4
<211> 140
<212> PRT
<213> -

<400> 4

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 Arg Ser Ile Gly Arg Leu Asp
20 25 30

Arg Met Gly Trp Tyr Arg His Arg Thr Gly Glu Pro Arg Glu Leu Val
35 40 45

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Phe Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu
115 120 125

Asp Leu Asn Gly Ala Ala His His His His His His
130 135 140

<210> 5
<211> 117
<212> PRT
<213> -

<400> 5

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 Arg Ser Ile Gly Arg Leu Asp
20 25 30

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

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 6
<211> 125
<212> PRT
<213> -

<400> 6

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ala
115 120 125

<210> 7
<211> 124
<212> PRT
<213> -

<400> 7

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
115 120

<210> 8
<211> 124
<212> PRT
<213> -

<400> 8

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

```
Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
        115                 120
```

<210> 9
<211> 125
<212> PRT
<213> -

<400> 9

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

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

<210> 10
<211> 126
<212> PRT

<213> -

<400> 10

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

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

<210> 11
<211> 123
<212> PRT
<213> -

<400> 11

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
```

100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 12
<211> 123
<212> PRT
<213> -

<400> 12

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 13
<211> 123
<212> PRT
<213> -

<400> 13

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 14
<211> 123
<212> PRT
<213> -

<400> 14

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 15
<211> 123
<212> PRT
<213> -

<400> 15

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
```

20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Gln Val Ser Ser
115 120

<210> 16
<211> 123
<212> PRT
<213> -

<400> 16

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

Ser Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 17
<211> 121

<212> PRT
<213> -

<400> 17

```
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 Val Phe Lys Ile Asn
            20                  25                  30

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

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

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

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

Phe Ile Thr Thr Glu Ser Asp Tyr Asp Leu Gly Arg Arg Tyr Trp Gly
            100                 105                 110

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

<210> 18
<211> 146
<212> PRT
<213> -

<400> 18

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

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

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

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

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

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

Phe Ile Thr Thr Glu Ser Asp Tyr Asp Leu Gly Arg Arg Tyr Trp Gly
100 105 110

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

Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr Pro Val
130 135 140

Gly Gly
145

<210> 19
<211> 151
<212> PRT
<213> -

<400> 19

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 Ile Ala Ser Gly Leu Pro Phe Ser Thr Lys
20 25 30

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

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

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

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

Ala Ser Gly Glu Arg Ser Thr Tyr Ile Gly Ser Asn Tyr Tyr Arg Thr
100 105 110

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

Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala
130 135 140

Ala His His His His His His
145 150

<210> 20
<211> 128
<212> PRT
<213> -

<400> 20

```
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 Ile Ala Ser Gly Leu Pro Phe Ser Thr Lys
            20                  25                  30

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

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

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

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

Ala Ser Gly Glu Arg Ser Thr Tyr Ile Gly Ser Asn Tyr Tyr Arg Thr
            100                 105                 110

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

<210> 21
<211> 151
<212> PRT
<213> -

<400> 21

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

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

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

Ser Arg Ile Ser Pro Gly Gly Thr Ser Arg Tyr Tyr Gly Asp Phe Val
    50                  55                  60

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

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

Ala Ser Gly Glu Arg Ser Thr Tyr Ile Gly Ser Asn Tyr Tyr Arg Thr
            100                 105                 110
```

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

Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala
    130                 135                 140

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

<210> 22
<211> 128
<212> PRT
<213> -

<400> 22

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

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

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

Ser Arg Ile Ser Pro Gly Gly Thr Ser Arg Tyr Tyr Gly Asp Phe Val
    50                  55                  60

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

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

Ala Ser Gly Glu Arg Ser Thr Tyr Ile Gly Ser Asn Tyr Tyr Arg Thr
            100                 105                 110

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

<210> 23
<211> 134
<212> PRT
<213> -

<400> 23

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Arg Ala Pro Gly
```

35 40 45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
50 55 60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
85 90 95

Lys Pro Glu Asp Thr Ala Val Tyr Thr Cys Ala Ala Ser Ala Ile Gly
100 105 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
115 120 125

Gln Val Thr Val Ser Ser
130

<210> 24
<211> 134
<212> PRT
<213> -

<400> 24

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
20 25 30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Arg Ala Pro Gly
35 40 45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
50 55 60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
85 90 95

Lys Pro Glu Asp Thr Ala Val Tyr Thr Cys Ala Ala Ser Ala Ile Gly
100 105 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
115 120 125

Gln Val Thr Val Ser Ser
130

<210> 25
<211> 134
<212> PRT
<213> -

<400> 25

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Arg Ala Pro Gly
        35                  40                  45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
    50                  55                  60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
                85                  90                  95

Arg Pro Glu Asp Thr Ala Val Tyr Thr Cys Ala Ala Ser Ala Ile Gly
            100                 105                 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
        115                 120                 125

Gln Val Thr Val Ser Ser
    130
```

<210> 26
<211> 134
<212> PRT
<213> -

<400> 26

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Arg Ala Pro Gly
        35                  40                  45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
    50                  55                  60
```

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
                85                  90                  95

Lys Pro Glu Asp Thr Ala Val Tyr Thr Cys Ala Ala Ser Ala Ile Gly
            100                 105                 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
        115                 120                 125

Leu Val Thr Val Ser Ser
    130
```

<210> 27
<211> 134
<212> PRT
<213> -

<400> 27

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Arg Ala Pro Gly
        35                  40                  45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
    50                  55                  60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
                85                  90                  95

Arg Pro Glu Asp Thr Ala Val Tyr Thr Cys Ala Ala Ser Ala Ile Gly
            100                 105                 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
        115                 120                 125

Leu Val Thr Val Ser Ser
    130
```

<210> 28
<211> 134
<212> PRT
<213> -

<400> 28

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Gln Ala Pro Gly
        35                  40                  45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
    50                  55                  60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
                85                  90                  95

Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala Ser Ala Ile Gly
            100                 105                 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
        115                 120                 125

Leu Val Thr Val Ser Ser
    130
```

<210> 29
<211> 137
<212> PRT
<213> -

<400> 29

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Gln Ala Pro Gly
        35                  40                  45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
    50                  55                  60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
                85                  90                  95
```

```
Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala Ser Ala Ile Gly
            100                 105                 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
        115                 120                 125

Leu Val Thr Val Ser Ser Ala Ala Ala
    130                 135
```

<210> 30
<211> 137
<212> PRT
<213> -

<400> 30

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Arg Thr Phe Asn Asn Tyr Ala Met Gly Trp Phe Arg Gln Ala Pro Gly
        35                  40                  45

Lys Glu Arg Glu Phe Val Ala Ala Ile Thr Arg Ser Gly Val Arg Ser
    50                  55                  60

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

Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu
                85                  90                  95

Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala Ser Ala Ile Gly
            100                 105                 110

Ser Gly Ala Leu Arg Arg Phe Glu Tyr Asp Tyr Ser Gly Gln Gly Thr
        115                 120                 125

Leu Val Thr Val Ser Ser Ala Ala Ala
    130                 135
```

<210> 31
<211> 367
<212> PRT
<213> -

<400> 31

```
Asp 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 Arg Ser Ile Gly Arg Leu Asp
```

20 25 30

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

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val
115 120 125

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

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

Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser
165 170 175

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

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

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

Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser
225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu
245 250 255

Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
260 265 270

Ala Ala Ser Arg Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg
275 280 285

His Arg Pro Gly Glu Pro Arg Glu Leu Val Ala Thr Ile Thr Gly Gly

290 295 300

Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
305 310 315 320

Ile Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
325 330 335

Pro Glu Asp Thr Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr
340 345 350

Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
355 360 365

<210> 32
<211> 368
<212> PRT
<213> -

<400> 32

Asp 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 Arg Ser Ile Gly Arg Leu Asp
20 25 30

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

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val
115 120 125

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

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

Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser
165 170 175

```
Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly
            180                 185                 190

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

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

Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu
                245                 250                 255

Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
            260                 265                 270

Ala Ala Ser Arg Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg
        275                 280                 285

His Arg Pro Gly Glu Pro Arg Glu Leu Val Ala Thr Ile Thr Gly Gly
    290                 295                 300

Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
305                 310                 315                 320

Ile Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
                325                 330                 335

Pro Glu Asp Thr Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr
            340                 345                 350

Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
        355                 360                 365
```

<210> 33
<211> 5
<212> PRT
<213> -

<400> 33

```
Val Thr Val Ser Ser
1               5
```

<210> 34
<211> 6
<212> PRT
<213> -

<220>

<221> MISC_FEATURE
<222> (6)..(6)
<223> X = a group (X)n, in which N = 1-10, preferably 1-5 and X is any amino acid.

<400> 34

Val Thr Val Ser Ser Xaa
1 5

<210> 35
<211> 218
<212> PRT
<213> -

<400> 35

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

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

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

Gly Trp Ile Asn Thr Val Thr Gly Glu Pro Ala Tyr Ala Asp Asp Phe
50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
85 90 95

Thr Arg Gly Leu Ile His Phe Tyr Tyr Trp Gly Gln Gly Thr Thr Leu
100 105 110

Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala
115 120 125

Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu
130 135 140

Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly
145 150 155 160

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

Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro
180 185 190

Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys
195 200 205

Val Asp Lys Lys Ile Val Pro Arg Asp Cys
210 215

<210> 36
<211> 214
<212> PRT
<213> -

<400> 36

Asp Ile Gln Met Thr Gln Thr Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15

Gly Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile His Asn Phe
20 25 30

Ile Ser Trp Tyr Gln His Lys Pro Gly Lys Val Pro Arg Leu Ile Ile
35 40 45

His Asp Thr Ser Thr Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His Tyr Asp Asn Leu Leu Arg
85 90 95

Ser Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala
100 105 110

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 37
<211> 122
<212> PRT
<213> -

<400> 37

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

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

<210> 38
<211> 271
<212> PRT
<213> -

<400> 38

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

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

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

Ser Gly Ile Lys Ser Ser Gly Asp Ser Thr Arg Tyr Ala Gly Ser 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 Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys
```

85 90 95

Ala Lys Ser Arg Val Ser Arg Thr Gly Leu Tyr Thr Tyr Asp Asn Arg
100 105 110

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
130 135 140

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

Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Asn Asn Tyr Ala Met
165 170 175

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

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

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

Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr
225 230 235 240

Tyr Cys Ala Ala Ser Ala Ile Gly Ser Gly Ala Leu Arg Arg Phe Glu
245 250 255

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

<210> 39
<211> 386
<212> PRT
<213> Artificial Sequence

<220>
<223> Nanobody or Nanobody construct

<400> 39

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

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

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

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

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

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

Ala Ala Tyr Ile Arg Pro Asp Thr Tyr Leu Ser Arg Asp Tyr Arg Lys
            100                 105                 110

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

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

Gly Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser
145                 150                 155                 160

Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro
                165                 170                 175

Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp
            180                 185                 190

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

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

Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser
225                 230                 235                 240

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

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

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
        275                 280                 285

Ser Ser Tyr Pro Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg
    290                 295                 300

Glu Phe Val Ser Ser Ile Thr Gly Ser Gly Gly Ser Thr Tyr Tyr Ala
305                 310                 315                 320
```

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

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

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

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

Ser Ala
385

<210> 40
<211> 364
<212> PRT
<213> -

<400> 40

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

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

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

Ser Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser 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 Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu
115 120 125

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

Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp
145 150 155 160

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser
165 170 175

Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe
180 185 190

Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn
195 200 205

Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly
210 215 220

Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Gly
225 230 235 240

Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly
245 250 255

Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
260 265 270

Ser Gly Phe Thr Phe Ser Asp Tyr Trp Met Tyr Trp Val Arg Gln Ala
275 280 285

Pro Gly Lys Gly Leu Glu Trp Val Ser Glu Ile Asn Thr Asn Gly Leu
290 295 300

Ile Thr Lys Tyr Pro Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg
305 310 315 320

Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro
325 330 335

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Pro Ser Gly Phe Asn
340 345 350

Arg Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
355 360

<210> 41
<211> 246
<212> PRT
<213> -

<400> 41

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 Val Phe Lys Ile Asn
20 25 30

Val Met Ala Trp Tyr Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Val

35 40 45

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

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

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

Phe Ile Thr Thr Glu Ser Asp Tyr Asp Leu Gly Arg Arg Tyr Trp Gly
100 105 110

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

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

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

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

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

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

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

Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu
225 230 235 240

Val Thr Val Ser Ser Ala
245

<210> 42
<211> 260
<212> PRT
<213> -

<400> 42

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 Arg Thr Phe Ser Tyr Asn
20 25 30

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

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

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

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

Ala Ala Ala Gly Val Arg Ala Glu Asp Gly Arg Val Arg Thr Leu Pro
100 105 110

Ser Glu Tyr Thr Phe Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120 125

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

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

Ser Tyr Asn Pro Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg
165 170 175

Glu Leu Val Ala Ala Ile Ser Arg Thr Gly Gly Ser Thr Tyr Tyr Pro
180 185 190

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

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

Tyr Tyr Cys Ala Ala Ala Gly Val Arg Ala Glu Asp Gly Arg Val Arg
225 230 235 240

Thr Leu Pro Ser Glu Tyr Thr Phe Trp Gly Gln Gly Thr Gln Val Thr
245 250 255

Val Ser Ser Ala
260

<210> 43
<211> 250
<212> PRT
<213> -

<400> 43

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

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

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

Leu Cys Ile Asp Ala Ser Asp Asp 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 Val Tyr Tyr Cys
                85                  90                  95

Ala Thr Pro Ile Gly Leu Ser Ser Ser Cys Leu Leu Glu Tyr Asp Tyr
            100                 105                 110

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

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
145                 150                 155                 160

Phe Thr Phe Arg Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
                165                 170                 175

Lys Gly Pro Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
            180                 185                 190

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
225                 230                 235                 240

Gln Gly Thr Leu Val Thr Val Ser Ser Ala
                245                 250
```

<210> 44
<211> 368
<212> PRT

<213> -

<400> 44

```
Asp 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 Arg Ser Ile Gly Arg Leu Asp
            20                  25                  30

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

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys
    50                  55                  60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu
            100                 105                 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val
        115                 120                 125

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

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

Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser
                165                 170                 175

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

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

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

Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu
                245                 250                 255
```

Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
260 265 270

Ala Ala Ser Arg Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg
275 280 285

His Arg Pro Gly Glu Pro Arg Glu Leu Val Ala Thr Ile Thr Gly Gly
290 295 300

Ser Ser Ile Asn Tyr Gly Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
305 310 315 320

Ile Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
325 330 335

Pro Glu Asp Thr Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr
340 345 350

Ser Arg Asp Thr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
355 360 365

<210> 45
<211> 117
<212> PRT
<213> -

<400> 45

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 Arg Ser Ile Gly Arg Leu Asp
20 25 30

Arg Met Gly Trp Tyr Arg His Arg Thr Gly Glu Pro Arg Glu Leu Val
35 40 45

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Phe Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser
115

<210> 46

<211> 143
<212> PRT
<213> -

<400> 46

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 Arg Ser Ile Gly Arg Leu Asp
20 25 30

Arg Met Gly Trp Tyr Arg His Arg Thr Gly Glu Pro Arg Glu Leu Val
35 40 45

Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn Tyr Gly Asp Phe Val Lys
50 55 60

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

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

Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser Ala Ala Ala His His His His His His Gly Ala
115 120 125

Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala Ala
130 135 140

<210> 47
<211> 146
<212> PRT
<213> -

<400> 47

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 Val Phe Lys Ile Asn
20 25 30

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

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

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

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

Phe Ile Thr Thr Glu Ser Asp Tyr Asp Leu Gly Arg Arg Tyr Trp Gly
100 105 110

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

Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr Pro Val
130 135 140

Gly Gly
145

<210> 48
<211> 151
<212> PRT
<213> -

<400> 48

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 Ile Ala Ser Gly Leu Pro Phe Ser Thr Lys
20 25 30

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

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

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

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

Ala Ser Gly Glu Arg Ser Thr Tyr Ile Gly Ser Asn Tyr Tyr Arg Thr
100 105 110

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

Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala
130 135 140

Ala His His His His His His
145 150

<210> 49
<211> 151
<212> PRT
<213> -

<400> 49

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

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

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

Ser Arg Ile Ser Pro Gly Gly Thr Ser Arg Tyr Tyr Gly Asp Phe Val
    50                  55                  60

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

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

Ala Ser Gly Glu Arg Ser Thr Tyr Ile Gly Ser Asn Tyr Tyr Arg Thr
            100                 105                 110

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

Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala
    130                 135                 140

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

<210> 50
<211> 121
<212> PRT
<213> -

<400> 50

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

Ser Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60
```

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

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

<210> 51
<211> 121
<212> PRT
<213> -

<400> 51

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

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

<210> 52
<211> 121
<212> PRT
<213> -

<400> 52

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
20 25 30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
35 40 45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
50 55 60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
100 105 110

Gln Gly Thr Leu Val Thr Val Gly Ser
115 120

<210> 53
<211> 121
<212> PRT
<213> -

<400> 53

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
20 25 30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
35 40 45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
50 55 60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Gly
115 120

<210> 54

<211> 121
<212> PRT
<213> -

<400> 54

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

Ser Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

Gln Gly Thr Leu Val Gln Val Gly Gly
        115                 120
```

<210> 55
<211> 122
<212> PRT
<213> -

<400> 55

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

```
Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

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

<210> 56
<211> 123
<212> PRT
<213> -

<400> 56

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

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

<210> 57
<211> 123
<212> PRT
<213> -

<400> 57

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

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

50 55 60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
115 120

<210> 58
<211> 124
<212> PRT
<213> -

<400> 58

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
20 25 30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
35 40 45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
50 55 60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
115 120

<210> 59
<211> 125
<212> PRT
<213> -

<400> 59

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

```
Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys
        115                 120                 125
```

<210> 60
<211> 124
<212> PRT
<213> -

<400> 60

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Pro
        115                 120
```

<210> 61
<211> 123
<212> PRT
<213> -

<400> 61

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Pro
        115                 120
```

<210> 62
<211> 124
<212> PRT
<213> -

<400> 62

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

```
Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Pro Thr
        115                 120
```

<210> 63
<211> 122
<212> PRT
<213> -

<400> 63

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
    50                  55                  60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser Trp
        115                 120
```

<210> 64
<211> 122
<212> PRT
<213> -

<400> 64

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

Leu Val Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
            20                  25                  30

Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly
        35                  40                  45
```

Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr
50 55 60

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

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

Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Leu
115 120

<210> 65
<211> 123
<212> PRT
<213> -

<400> 65

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 66
<211> 123
<212> PRT
<213> -

<400> 66

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

```
Ser Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 67
<211> 123
<212> PRT
<213> -

<400> 67

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 68
<211> 123
<212> PRT
<213> -

<400> 68

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

Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 69
<211> 123
<212> PRT
<213> -

<400> 69

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

85 90 95

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 70
<211> 123
<212> PRT
<213> -

<400> 70

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Gln Val Ser Ser
115 120

<210> 71
<211> 123
<212> PRT
<213> -

<400> 71

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

```
Glu Pro Arg Glu Leu Val Ala Thr Ile Thr Gly Gly Ser Ser Ile Asn
    50                  55                  60

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Gly
        115                 120
```

<210> 72
<211> 123
<212> PRT
<213> -

<400> 72

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Gly Gly
        115                 120
```

<210> 73
<211> 124
<212> PRT
<213> -

<400> 73

```
His His His His His His Glu Val Gln Leu Val Glu Ser Gly Gly Gly
```

1 5 10 15

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Gly Gly Gly
115 120

<210> 74
<211> 124
<212> PRT
<213> -

<400> 74

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
115 120

<210> 75
<211> 125
<212> PRT
<213> -

<400> 75

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ala
        115                 120                 125
```

<210> 76
<211> 126
<212> PRT
<213> -

<400> 76

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

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

<210> 77
<211> 124
<212> PRT
<213> -

<400> 77

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
115 120

<210> 78
<211> 123
<212> PRT
<213> -

<400> 78

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

Leu Val Arg Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 79
<211> 124
<212> PRT
<213> -

<400> 79

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

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg Ser
20 25 30

Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly Glu
35 40 45

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

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

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

Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
115 120

<210> 80
<211> 123
<212> PRT
<213> -

<400> 80

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Gln Val Gly Gly
        115                 120
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<210> 81
<211> 123
<212> PRT
<213> -

<400> 81

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

Val Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
```

115 120

<210> 82
<211> 123
<212> PRT
<213> -

<400> 82

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 83
<211> 123
<212> PRT
<213> -

<400> 83

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 84
<211> 123
<212> PRT
<213> -

<400> 84

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

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Gly Ser
        115                 120
```

<210> 85
<211> 123
<212> PRT
<213> -

<400> 85

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

Ser Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
```

35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Gln Val Gly Gly
115 120

<210> 86
<211> 123
<212> PRT
<213> -

<400> 86

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

Ser Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Gln Val Ser Ser
115 120

<210> 87
<211> 123
<212> PRT
<213> -

<400> 87

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

Ser Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Gly Gly
        115                 120
```

<210> 88
<211> 124
<212> PRT
<213> -

<400> 88

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

Ser Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
            20                  25                  30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
        35                  40                  45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
            100                 105                 110
```

Trp Gly Gln Gly Thr Leu Val Gln Val Ser Ser Ala
115 120

<210> 89
<211> 123
<212> PRT
<213> -

<400> 89

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

Ser Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Arg
20 25 30

Ser Ile Gly Arg Leu Asp Arg Met Gly Trp Tyr Arg His Arg Pro Gly
35 40 45

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

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

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

Ala Val Tyr Tyr Cys Asn Phe Asn Lys Tyr Val Thr Ser Arg Asp Thr
100 105 110

Trp Gly Gln Gly Thr Leu Val Gln Val Gly Gly
115 120