

SEQUENCE LISTING

<110> Probiodrug AG

<120> Humanized Antibodies

<130> PBD128WO

<160> 74

<170> PatentIn version 3.5

<210> 1

<211> 42

<212> PRT

<213> Human

<400> 1

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Leu	Val	Phe	Phe	Ala	Glu	Asp	Val	Gly	Ser	Asn	Lys	Gly	Ala	Ile	Ile
			20					25					30		

Gly	Leu	Met	Val	Gly	Gly	Val	Val	Ile	Ala
		35				40			

<210> 2

<211> 40

<212> PRT

<213> Human

<400> 2

Asp	Ala	Glu	Phe	Arg	His	Asp	Ser	Gly	Tyr	Glu	Val	His	His	Gln	Lys
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Leu	Val	Phe	Phe	Ala	Glu	Asp	Val	Gly	Ser	Asn	Lys	Gly	Ala	Ile	Ile
			20					25					30		

Gly	Leu	Met	Val	Gly	Gly	Val	Val
		35				40	

<210> 3
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<212> PRT
<213> Human

<400> 3

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly
35

<210> 4
<211> 40
<212> PRT
<213> Human

<400> 4

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu
20 25 30

Met Val Gly Gly Val Val Ile Ala
35 40

<210> 5
<211> 38
<212> PRT
<213> Human

<400> 5

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu

20

25

30

Met Val Gly Gly Val Val
35

<210> 6
<211> 36
<212> PRT
<213> Human

<400> 6

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu
20 25 30

Met Val Gly Gly
35

<210> 7
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<222> (31)..(31)
<223> X is His or Tyr

<220>
<221> VARIANT
<222> (53)..(53)
<223> Xaa is Ala, Ile or Thr

<400> 7

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Xaa Ser
20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

Pro Arg Arg Leu Xaa Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly
85 90 95

Thr His Phe Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 8
<211> 16
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<222> (8)..(8)
<223> Xaa is His or Tyr

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Lys Ser Ser Gln Ser Leu Leu Xaa Ser Asp Gly Lys Thr Tyr Leu Asn
1 5 10 15

<210> 9
<211> 7
<212> PRT
<213> Homo sapiens

<400> 9

Leu Val Ser Lys Leu Asp Ser
1 5

<210> 10

<211> 7

<212> PRT

<213> Homo sapiens

<400> 10

Val Gln Gly Thr His Phe Pro
1 5

<210> 11

<211> 112

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 11

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser
20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

Pro Arg Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly
85 90 95

Thr His Phe Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

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<400> 12

Lys Ser Ser Gln Ser Leu Leu Tyr Ser Asp Gly Lys Thr Tyr Leu Asn
1 5 10 15

<210> 13
<211> 112
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<213> Artificial Sequence

<220>
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<400> 13

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser
20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

Pro Arg Arg Leu Ala Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly

85

90

95

Thr His Phe Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110

<210> 14

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<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

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Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
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Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser
 20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
 35 40 45

Pro Arg Arg Leu Thr Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
 50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly
 85 90 95

Thr His Phe Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110

<210> 15

<211> 112

<212> PRT

<213> Artificial

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<223> Synthetic peptide

<400> 15

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

Pro Arg Arg Leu Thr Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly
85 90 95

Thr His Phe Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 16

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<212> PRT

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<223> Synthetic peptide

<400> 16

Lys Ser Ser Gln Ser Leu Leu His Ser Asp Gly Lys Thr Tyr Leu Asn
1 5 10 15

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<211> 119

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<223> Xaa is His or Tyr

<220>

<221> Variant

<222> (54)..(54)

<223> Xaa is Ser or Tyr

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<222> (56)..(56)

<223> Xaa is Gly, Thr, Ala or Glu

<220>

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<222> (65)..(65)

<223> Xaa is Lys or Gln

<220>

<221> Variant

<222> (70)..(70)

<223> Xaa is Leu or Ile

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<221> Variant

<222> (71)..(71)

<223> Xaa is Ile or Thr

<220>

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<222> (80)..(80)

<223> Xaa is Tyr or His

<220>

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<222> (93)..(93)

<223> Xaa is Val or Thr

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

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

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

Gly Leu Ile Asn Pro Xaa Asn Xaa Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Xaa Gly Arg Val Thr Xaa Xaa Arg Asp Thr Ser Thr Thr Thr Val Xaa
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Xaa Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
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<222> (7)..(7)
<223> Xaa is Tyr or His

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

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<222> (5)..(5)
<223> Xaa is Tyr or Ser

<220>
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<222> (7)..(7)
<223> Xaa is Gly, Thr, Ala or Glu

<220>
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<223> Xaa is Lys and Gln

<400> 19

Leu Ile Asn Pro Xaa Asn Xaa Val Thr Arg Tyr Asn Gln Lys Phe Xaa
1 5 10 15

Gly

<210> 20
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<400> 20

Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr
1 5 10

<210> 21
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<212> PRT
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<400> 21

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

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

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

Gly Leu Ile Asn Pro Tyr Asn Gly Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

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

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

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

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<400> 22

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

<210> 23
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<400> 23

Leu Ile Asn Pro Tyr Asn Gly Val Thr Arg Tyr Asn Gln Lys Phe Lys
1 5 10 15

Gly

<210> 24
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<400> 24

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

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

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

Gly Leu Ile Asn Pro Ser Asn Gly Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

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

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

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<400> 25

Gly Tyr Ser Phe Thr Gly His Thr Met Asn
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<210> 26
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<400> 26

Leu Ile Asn Pro Ser Asn Gly Val Thr Arg Tyr Asn Gln Lys Phe Gln
1 5 10 15

Gly

<210> 27
<211> 119
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 27

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

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

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

Gly Leu Ile Asn Pro Ser Asn Gly Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 28

<211> 112

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 28

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

Asp Arg Val Thr Ile Thr Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30

Asp Gly Asn Thr Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

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

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Ser Gln Ser
85 90 95

Thr His Val Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 29
<211> 16
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 29

Arg Ser Ser Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 30
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 30

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 31
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 31

Ser Gln Ser Thr His Val Pro Pro Thr
1 5

<210> 32
<211> 122
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 32

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

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

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

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

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

<210> 33
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<400> 33

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

<210> 34
<211> 17
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<400> 34

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

Gly

<210> 35
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<212> PRT
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<400> 35

Tyr Asp Tyr Asp Asn Ile Leu Asp Tyr Val Met Asp Tyr
1 5 10

<210> 36

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<400> 36

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser
20 25 30

Asn Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

Pro Arg Arg Leu Ile Tyr Val Val Ser Lys Leu Asp Ser Gly Val Pro
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly
85 90 95

Thr His Phe Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 37

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<212> PRT

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<400> 37

Lys Ser Ser Gln Ser Leu Leu Tyr Ser Asn Gly Lys Thr Tyr Leu Asn
1 5 10 15

<210> 38

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 38

Val Val Ser Lys Leu Asp Ser
1 5

<210> 39

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 39

Val Gln Gly Thr His Phe Pro Phe Thr
1 5

<210> 40

<211> 115

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 40

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

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

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

Gly Gln Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe
50 55 60

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

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

Ala Arg Glu Gly Tyr Ile Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

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<220>
<223> Synthetic peptide

<400> 41

Gly Tyr Ile Phe Asn Asn Tyr
1 5

<210> 42
<211> 17
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<213> Artificial sequence

<220>
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<400> 42

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

Gly

<210> 43

<211> 6

<212> PRT

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<220>

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<400> 43

Glu Gly Tyr Ile Val Tyr
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<210> 44

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> PCR primer

<400> 44

actgtggctg caccatctgt cttc

24

<210> 45

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> PCR primer

<400> 45

ctaacactct cccctgttga agctc

25

<210> 46

<211> 23

<212> DNA
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<400> 46
agggaaccct ggtcaccgtc tcc 23

<210> 47
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<212> DNA
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<400> 47
tcatttaccc ggagacaggg agagg 25

<210> 48
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<212> DNA
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<400> 48
caagtcagag cctcttatat agtg 24

<210> 49
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<212> DNA
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<223> PCR primer

<400> 49
gtaccttgca cgcagtaata aac 23

<210> 50
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<221> MOD_RES

<222> (1)..(1)

<223> PYRROLIDONE CARBOXYLIC ACID

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Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

<210> 51

<211> 18

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 51

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val

<210> 52

<211> 17

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 52

Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu
1 5 10 15

Val

<210> 53
<211> 15
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<400> 53

Phe	Arg	His	Asp	Ser	Gly	Tyr	Glu	Val	His	His	Gln	Lys	Leu	Val
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<222> (1)..(1)
<223> PYRROLIDONE CARBOXYLIC ACID

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Glu	Phe	Arg	His	Asp	Ser	Gly	Tyr	Glu	Val	His	His	Gln	Lys	Leu
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<222> (1)..(1)
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<400> 55

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10

<210> 56

<211> 13

<212> PRT

<213> Artificial sequence

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<222> (1)..(1)

<223> PYRROLIDONE CARBOXYLIC ACID

<400> 56

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln
1 5 10

<210> 57

<211> 12

<212> PRT

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<223> Synthetic peptide

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<222> (1)..(1)

<223> PYRROLIDONE CARBOXYLIC ACID

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Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His
1 5 10

<210> 58

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<222> (1)..(1)
<223> PYRROLIDONE CARBOXYLIC ACID

<400> 58

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His
1 5 10

<210> 59
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<222> (1)..(1)
<223> PYRROLIDONE CARBOXYLIC ACID

<400> 59

Glu Phe Arg His Asp Ser Gly Tyr Glu Val
1 5 10

<210> 60
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<223> PYRROLIDONE CARBOXYLIC ACID

<400> 60

Glu Phe Arg His Asp Ser Gly Tyr Glu
1 5

<210> 61

<211> 8

<212> PRT

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<221> MOD_RES

<222> (1)..(1)

<223> PYRROLIDONE CARBOXYLIC ACID

<400> 61

Glu Phe Arg His Asp Ser Gly Tyr
1 5

<210> 62

<211> 7

<212> PRT

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<222> (1)..(1)

<223> PYRROLIDONE CARBOXYLIC ACID

<400> 62

Glu Phe Arg His Asp Ser Gly
1 5

<210> 63

<211> 6

<212> PRT

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<220>
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<222> (1)..(1)
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<400> 63

Glu Phe Arg His Asp Ser
1 5

<210> 64
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<220>
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Glu Phe Arg His
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<210> 65
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<222> (1)..(1)
<223> PYRROLIDONE CARBOXYLIC ACID

<400> 65

Glu Phe Arg
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<210> 66

<211> 119

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 66

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

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

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

Gly Leu Ile Asn Pro Ser Asn Thr Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 67

<211> 17

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 67

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

Gly

<210> 68
<211> 119
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 68

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

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

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

Gly Leu Ile Asn Pro Ser Asn Ala Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 69
<211> 17
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 69

Leu Ile Asn Pro Ser Asn Ala Val Thr Arg Tyr Asn Gln Lys Phe Gln
1 5 10 15

Gly

<210> 70
<211> 119
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 70

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

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

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

Gly Leu Ile Asn Pro Ser Asn Glu Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 71
<211> 17
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 71

Leu Ile Asn Pro Ser Asn Glu Val Thr Arg Tyr Asn Gln Lys Phe Gln
1 5 10 15

Gly

<210> 72
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<220>
<221> MOD_RES
<222> (1)..(1)
<223> PYRROLIDONE CARBOXYLIC ACID

<400> 72

Glu Phe Arg His Asp
1 5

<210> 73

<211> 449

<212> PRT

<213> Homo sapiens

<400> 73

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

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

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

Gly Leu Ile Asn Pro Ser Asn Glu Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

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

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp

145		150		155		160									
Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu
				165					170					175	
Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser
			180					185					190		
Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro
		195					200					205			
Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys
	210					215					220				
Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro
225					230					235					240
Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser
			245						250					255	
Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp
			260					265					270		
Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn
	275						280					285			
Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val
	290					295					300				
Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu
305					310					315					320
Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys
				325					330					335	
Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr
			340					345					350		

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

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

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

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

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

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

Lys

<210> 74

<211> 449

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 74

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

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

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

Gly Leu Ile Asn Pro Ser Asn Glu Val Thr Arg Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Thr Thr Val His
65 70 75 80

Met Glu Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Thr Arg Glu Ala Lys Arg Glu Trp Asp Glu Thr Tyr Trp Gly Gln Gly
100 105 110

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

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

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

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

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

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
195 200 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
210 215 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
225 230 235 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser

245

250

255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
 260 265 270

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

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

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

Tyr Lys Cys Ala Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
 325 330 335

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

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

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

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

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

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

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

Lys