

SEQUENCE LISTING

<110> Phanes Therapeutics, Inc.

<120> Anti-apelin Antibodies and Uses Thereof

<130> 689204.1WO

<150> 62/549,523

<151> 2017-08-24

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<160> 221

<170> PatentIn version 3.5

<210> 1

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> C8 Heavy Chain Variable Region

<400> 1

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

Leu	Thr	Leu	Thr	Cys	Thr	Val	Ser	Gly	Ile	Asp	Leu	Tyr	Ser	Asn	Arg
			20					25					30		

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

Ser	Ile	Gly	Ser	Ser	Pro	Trp	Tyr	Ala	Ser	Trp	Ala	Gln	Gly	Arg	Phe
		50				55					60				

Thr	Ile	Ser	Lys	Thr	Ser	Ser	Thr	Thr	Val	Asn	Leu	Lys	Ile	Thr	Ser
65					70					75					80

Pro Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr
85 90 95

Arg Pro Gly Ala Ser Val Trp Gly Pro Gly Thr Leu Val Thr Val Ser
100 105 110

Ser

<210> 2
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> C8 Light Chain Variable Region

<400> 2

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

Thr Val Thr Ile Ala Cys Gln Ser Ser Gln Ser Val Tyr Asp Asn Asn
20 25 30

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

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

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

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Ala Gly Gly Tyr Ser Gly Asp
85 90 95

Ile Tyr Thr Phe Gly Gly Gly Thr Glu Val Val Val Glu
100 105

<210> 3
<211> 112
<212> PRT
<213> Artificial Sequence

<220>

<223> C24 Heavy Chain Variable Region

<400> 3

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Tyr Thr Asn Arg
20 25 30

Val Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp Ile Gly
35 40 45

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly Arg Phe
50 55 60

Thr Ile Ser Lys Thr Ser Thr Thr Val Asn Leu Lys Ile Thr Ser Ser
65 70 75 80

Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr Arg
85 90 95

Pro Gly Gly Ser Ile Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
100 105 110

<210> 4

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> C24 Light Chain Variable Region

<400> 4

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

Ser Val Thr Ile Ala Cys Gln Ser Ser Gln Ser Val Tyr Asp Asn Asn
20 25 30

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

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

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

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Ala Gly Gly Tyr Ser Gly Asp
85 90 95

Ile Tyr Thr Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 5

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> C25 Heavy Chain Variable Region

<400> 5

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Tyr Thr Asn Arg
20 25 30

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

Ser Ile Gly Ser Ser Pro Trp Phe Ala Ser Trp Ala Leu Gly Arg Phe
50 55 60

Thr Ile Ser Lys Thr Ser Thr Thr Val Asn Leu Lys Ile Thr Ser Pro
65 70 75 80

Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr Arg
85 90 95

Pro Gly Ala Ser Val Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
100 105 110

<210> 6
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> C25 Light Chain Variable Region

<400> 6

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

Thr Val Thr Ile Ala Cys Gln Ser Ser Gln Ser Val Tyr Asp Asn Asn
20 25 30

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

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

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

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Ala Gly Gly Tyr Asn Gly Asp
85 90 95

Ile Tyr Thr Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 7
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 Heavy Chain Variable Region

<400> 7

Gln Ser Leu Glu Glu Ser Gly Gly Arg Leu Ala Lys Pro Asp Glu Thr
1 5 10 15

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Asn Ser His Ala
20 25 30

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

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

Arg Phe Thr Ile Ser Lys Thr Ser Ser Thr Ser Val Glu Leu Lys Met
65 70 75 80

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

Pro Ile Glu Pro Gly Ala Asn Ile Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 8

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> C7 Light Chain Variable Region

<400> 8

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

Gly Thr Val Thr Ile Gly Cys Gln Ala Ser Glu Ser Val Asp Tyr Asn
20 25 30

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

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

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

Glu Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Pro Tyr
85 90 95

Asn Ile Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 9
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 Heavy Chain Variable Region

<400> 9

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Ser Asn Tyr Ala
20 25 30

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

Val Ile Ala Pro Asn Arg Arg Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
50 55 60

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

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

Pro Ile Glu Pro Gly Ala Asn Ile Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 10
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 Light Chain Variable Region

<400> 10

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

Gly Thr Val Thr Ile Gly Cys Gln Ser Ser Glu Ser Val Asp Tyr Asn
20 25 30

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

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

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

Glu Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Ile Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 11
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> C1 Heavy Chain Variable Region

<400> 11

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

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

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

Val Ile Ala Pro Asn Gly Ala Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
50 55 60

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

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

Ile Asp Ala Gly Ala Asn Ile Trp Gly Pro Gly Thr Leu Val Thr Val
100 105 110

Ser Ser

<210> 12

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> C1 Light Chain Variable Region

<400> 12

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

Gly Thr Val Thr Ile Gly Cys Gln Ser Ser Glu Ser Val Asp Asn Asn
20 25 30

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

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

Lys Gly Ser Gly Ser Gly Thr His Phe Thr Leu Thr Ile Ser Gly Val
65 70 75 80

Gln Cys Tyr Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 13
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> C16 Heavy Chain Variable Region

<400> 13

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Asn Ser Tyr Ala
20 25 30

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

Val Ile Ala Pro Asn His Tyr Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
50 55 60

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

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

Ile Glu Ser Gly Ser Asn Ile Trp Gly Pro Gly Thr Leu Val Ile Val
100 105 110

Ser Ser

<210> 14
<211> 110

<212> PRT
<213> Artificial Sequence

<220>
<223> C16 Light Chain Variable Region

<400> 14

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

Gly Thr Val Thr Ile Gly Cys Gln Ser Ser Glu Ser Val Gly Met Asn
20 25 30

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

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

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

Glu Cys Asp Asp Ala Gly Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 15
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> C20 Heavy Chain Variable Region

<400> 15

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Asn Asn Tyr Ala
20 25 30

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

Val Ile Ala Pro Asn His Tyr Thr Cys Tyr Pro Thr Trp Ala Arg Gly
50 55 60

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

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

Ile Glu Thr Gly Ser Asn Ile Trp Gly Pro Gly Thr Leu Val Ile Val
100 105 110

Ser Ser

<210> 16
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> C20 Light Chain Variable Region

<400> 16

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

Gly Thr Val Thr Ile Ser Cys Gln Ser Ser Glu Ser Val Asp Met Asn
20 25 30

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

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

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

Glu Cys Ala Asp Ala Gly Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 17
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> C22 Heavy Chain Variable Region

<400> 17

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Asn Asn Tyr Ala
20 25 30

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

Val Ile Ala Pro Asn His Tyr Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
50 55 60

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

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

Ile Glu Thr Gly Ser Asn Ile Trp Gly Pro Gly Thr Leu Val Ile Val
100 105 110

Ser Ser

<210> 18
<211> 110
<212> PRT
<213> Artificial Sequence

<220>

<223> C22 Light Chain Variable Region

<400> 18

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

Gly Thr Val Thr Ile Ser Cys Gln Ser Ser Glu Ser Val Asp Met Asn
20 25 30

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

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

Lys Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Gly Val
65 70 75 80

Gln Cys Asp Asp Ala Gly Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 19

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> C10 Heavy Chain Variable Region

<400> 19

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Asn Ser Tyr Ala
20 25 30

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

Val Ile Ala Pro Ser Gly Thr Thr Tyr Tyr Pro Thr Trp Ala Lys Gly
50 55 60

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

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

Ile Asp Pro Gly Ser Asn Ile Trp Gly Pro Gly Thr Leu Val Thr Val
100 105 110

Ser Ser

<210> 20
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> C10 Light Chain Variable Region

<400> 20

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

Gly Thr Ala Thr Ile Gly Cys Gln Ser Ser Glu Ser Val Asp Tyr Gly
20 25 30

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

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

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

Glu Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Gln
100 105 110

<210> 21
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 Heavy Chain Variable Region

<400> 21

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Ser Ser Tyr Ala
20 25 30

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

Val Ile Ala Pro Ser Ser Thr Thr Tyr Tyr Pro Thr Trp Ala Lys Gly
50 55 60

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

Ile Gly Leu Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Ala Tyr
85 90 95

Pro Ile Asp Pro Gly Ser Asn Val Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 22
<211> 110
<212> PRT
<213> Artificial Sequence

<220>

<223> C12 Light Chain Variable Region

<400> 22

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

Gly Thr Val Thr Ile Gly Cys Gln Ser Ser Glu Ser Val Asp Tyr Gly
20 25 30

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

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

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

Glu Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Gln
100 105 110

<210> 23

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> C13 Heavy Chain Variable Region

<400> 23

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Asn Ser His Ala
20 25 30

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

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

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

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

Pro Ile Tyr Ser Gly Asp Asn Ile Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 24
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 Light Chain Variable Region

<400> 24

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

Gly Thr Val Thr Ile Asn Cys Gln Ser Ser Glu Ser Val Asp Asn Asn
20 25 30

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

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

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

Glu Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Thr Ala Thr
85 90 95

Asn Ile Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 25
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 Heavy Chain Variable Region

<400> 25

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

Leu Thr Leu Thr Cys Lys Ile Ser Gly Val Asp Leu Ser Asn Tyr Ala
20 25 30

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

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

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

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

Ile Asp Val Gly Ala Asn Val Trp Gly Pro Gly Thr Leu Val Thr Val
100 105 110

Ser Ser

<210> 26
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 Light Chain Variable Region

<400> 26

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

Gly Thr Val Thr Ile Asn Cys Gln Ser Ser Glu Ser Val Asp Tyr Asn
20 25 30

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

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

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

Glu Cys Asp Asp Ala Gly Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 27

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> C11 Heavy Chain Variable Region

<400> 27

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

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

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

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

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

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

Ile Asp Ala Gly Ala Asn Val Trp Gly Pro Gly Thr Leu Val Thr Val
100 105 110

Ser Ser

<210> 28

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> C11 Light Chain Variable Region

<400> 28

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

Gly Thr Val Thr Ile Asn Cys Gln Ser Ser Glu Ser Val Asp Tyr Asn
20 25 30

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

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

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

Glu Cys Asp Asp Ala Gly Thr Tyr Tyr Cys Gln Gly Gly Tyr Ile Ser
85 90 95

Asn Leu Tyr Pro Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 29
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> C4 Heavy Chain Variable Region

<400> 29

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

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

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

Gly Leu Glu Trp Ile Gly Cys Ile His Tyr Gly Ser Ser Gly Thr Ala
50 55 60

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

Asp Gln Ser Thr Gly Cys Leu Gln Leu Asn Ser Leu Thr Ala Ala Asp
85 90 95

Thr Ala Met Tyr Tyr Cys Ala Arg Phe Leu Ser Asp Met Tyr Tyr Tyr
100 105 110

Asn Leu Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 30
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> C4 Light Chain Variable Region

<400> 30

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

Thr Val Thr Ile Asn Cys Gln Ala Ser Gln Ser Ile Tyr Asn Asn Asn
20 25 30

Gln Leu Ser Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu
35 40 45

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

Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Gly Val Gln
65 70 75 80

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gln Phe Asn Cys Arg
85 90 95

Ser Ala Asp Cys His Ala Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 31
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> C5 Heavy Chain Variable Region

<400> 31

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Gly Ala Trp
20 25 30

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

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

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

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

Gly Thr Ile Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
100 105 110

<210> 32
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> C5 Light Chain Variable Region

<400> 32

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

Thr Val Thr Ile Asn Cys Gln Ser Ser Gln Ser Val Trp Ser Asn Tyr
20 25 30

Leu Ser Trp Phe Gln Gln Lys Pro Gly Gln Pro Pro Lys Val Leu Ile
35 40 45

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

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Asn Asp Leu Glu Cys
65 70 75 80

Asp Asp Ala Ala Thr Tyr Tyr Cys Ala Gly Gly Tyr Ser Gly His Ile
85 90 95

Tyr Ser Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 33
<211> 121
<212> PRT
<213> Artificial Sequence

<220>

<223> C9 Heavy Chain Variable Region

<400> 33

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

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

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

Ile Ala Cys Ile Tyr Gln Ser Gly Asp Gly Arg Thr Trp Tyr Ala Ser
50 55 60

Trp Ala Glu Gly Arg Phe Thr Ile Ser Lys Thr Ser Pro Thr Thr Val
65 70 75 80

Thr Leu Gln Met Ala Ser Leu Thr Ala Ala Asp Thr Ala Thr Tyr Phe
85 90 95

Cys Ala Arg Cys Pro His Asn Thr Tyr Ser His Phe Asp Leu Trp Gly
100 105 110

Pro Ser Thr Leu Val Thr Val Ser Ser
115 120

<210> 34

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> C9 Light Chain Variable Region

<400> 34

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

Gly Gly Thr Val Thr Ile Lys Cys Gln Ala Ser Gln Ser Ile Asn Ser
20 25 30

Trp Leu Ser Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Pro Leu
35 40 45

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

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

Cys Ala Asp Ala Ala Thr Tyr Ser Cys Leu Gly Tyr Tyr Tyr Ser Ser
85 90 95

Tyr Asn Ser Val Gly Phe Trp Ala Phe Gly Gly Gly Thr Glu Val Val
100 105 110

Val Lys

<210> 35
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> C26 Heavy Chain Variable Region

<400> 35

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

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

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

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

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

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

Arg Ser Gly Gly Leu Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
100 105 110

<210> 36
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> C26 Light Chain Variable Region

<400> 36

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

Thr Val Thr Ile Asn Cys Gln Ala Ser Gln Ser Val Tyr Asn Asn Asn
20 25 30

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

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

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

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Ala Gly Gly Trp Ser Gly Asn
85 90 95

Phe Tyr Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 37
<211> 108
<212> PRT
<213> Artificial Sequence

<220>

<223> C27 Heavy Chain Variable Region

<400> 37

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Ile Asn Ala Trp
20 25 30

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

Thr Thr Thr Asp Asp Asp Thr Ile Tyr Tyr Ala Asn Trp Ala Lys Gly
50 55 60

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

Ser Leu Thr Ser Glu Asp Thr Ala Thr Tyr Phe Cys Ser Lys Gly Arg
85 90 95

Ile Trp Gly Pro Gly Thr Leu Val Thr Val Ser Leu
100 105

<210> 38

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> C27 Light Chain Variable Region

<400> 38

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

Thr Val Thr Ile Asn Cys Gln Ala Ser Gln Ser Val Tyr Asp Gly Asn
20 25 30

Trp Leu Cys Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Arg Leu
35 40 45

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

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

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Phe Thr Ser Asn
85 90 95

Ile Tyr Pro Phe Ala Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 39

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> C17 Heavy Chain Variable Region

<400> 39

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

Leu Thr Leu Thr Cys Ala Val Ser Gly Ile Asp Leu Ser Ser Asn Ala
20 25 30

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

Ser Met Tyr Thr Asp Gly Thr Thr Tyr Tyr Ala Asn Trp Ala Lys Gly
50 55 60

Arg Phe Thr Ile Ser Arg Ala Ser Ser Thr Thr Val Asp Leu Lys Met
65 70 75 80

Thr Ser Leu Thr Ala Ala Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly
85 90 95

Asp Ile Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
100 105

<210> 40
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> C17 Light Chain Variable Region

<400> 40

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

Thr Val Thr Ile Ser Cys Gln Ser Ser Gln Ser Val Tyr Asn Asn Asn
20 25 30

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

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

Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Gly Val Gln
65 70 75 80

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Leu Gly Thr Tyr Ser Ser Asn
85 90 95

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

<210> 41
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C8 HC CDR1

<400> 41

Ser Asn Arg Met Ser
1 5

<210> 42
<211> 14

<212> PRT
<213> Artificial Sequence

<220>
<223> C8 HC CDR2

<400> 42

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly
1 5 10

<210> 43
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C8 HC CDR3

<400> 43

Gly Gly Tyr Arg Pro Gly Ala Ser Val
1 5

<210> 44
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C24 HC CDR1

<400> 44

Thr Asn Arg Val Ser
1 5

<210> 45
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> C24 HC CDR2

<400> 45

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly
1 5 10

<210> 46
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C24 HC CDR3

<400> 46

Gly Gly Tyr Arg Pro Gly Gly Ser Ile
1 5

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

<220>
<223> C25 HC CDR1

<400> 47

Thr Asn Arg Met Ser
1 5

<210> 48
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> C25 HC CDR2

<400> 48

Ser Ile Gly Ser Ser Pro Trp Phe Ala Ser Trp Ala Leu Gly
1 5 10

<210> 49
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C25 HC CDR3

<400> 49

Gly Gly Tyr Arg Pro Gly Ala Ser Val
1 5

<210> 50
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 HC CDR1

<400> 50

Ser His Ala Met Asp
1 5

<210> 51
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 HC CDR2

<400> 51

Val Ile Ala Pro Asp Thr Arg Thr Tyr Tyr Ala Thr Trp Ala Arg Gly
1 5 10 15

<210> 52
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 HC CDR3

<400> 52

Tyr Pro Ile Glu Pro Gly Ala Asn Ile
1 5

<210> 53
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 HC CDR1

<400> 53

Asn Tyr Ala Met Asp
1 5

<210> 54
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 HC CDR2

<400> 54

Val Ile Ala Pro Asn Arg Arg Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
1 5 10 15

<210> 55
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 HC CDR3

<400> 55

Tyr Pro Ile Glu Pro Gly Ala Asn Ile
1 5

<210> 56
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C1 HC CDR1

<400> 56

Ser Tyr Ala Met Asp
1 5

<210> 57
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C1 HC CDR2

<400> 57

Val	Ile	Ala	Pro	Asn	Gly	Ala	Thr	Tyr	Tyr	Pro	Thr	Trp	Ala	Arg	Gly
1				5					10					15	

<210> 58

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> C1 HC CDR3

<400> 58

Tyr	Pro	Ile	Asp	Ala	Gly	Ala	Asn	Ile
1				5				

<210> 59

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> C16 HC CDR1

<400> 59

Ser	Tyr	Ala	Met	Asp
1			5	

<210> 60

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> C16 HC CDR2

<400> 60

Val	Ile	Ala	Pro	Asn	His	Tyr	Thr	Tyr	Tyr	Pro	Thr	Trp	Ala	Arg	Gly
1				5					10					15	

<210> 61

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> C16 HC CDR3

<400> 61

Tyr Pro Ile Glu Ser Gly Ser Asn Ile
1 5

<210> 62

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> C20 HC CDR1

<400> 62

Asn Tyr Ala Ile Asp
1 5

<210> 63

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> C20 HC CDR2

<400> 63

Val Ile Ala Pro Asn His Tyr Thr Cys Tyr Pro Thr Trp Ala Arg Gly
1 5 10 15

<210> 64

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> C20 HC CDR3

<400> 64

Tyr Pro Ile Glu Thr Gly Ser Asn Ile
1 5

<210> 65

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> C22 HC CDR1

<400> 65

Asn Tyr Ala Met Asp
1 5

<210> 66

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> C22 HC CDR2

<400> 66

Val Ile Ala Pro Asn His Tyr Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
1 5 10 15

<210> 67

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> C22 HC CDR3

<400> 67

Tyr Pro Ile Glu Thr Gly Ser Asn Ile
1 5

<210> 68

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> C10 HC CDR1

<400> 68

Ser Tyr Ala Ile Asp
1 5

<210> 69

<211> 16

<212> PRT
<213> Artificial Sequence

<220>
<223> C10 HC CDR2

<400> 69

Val	Ile	Ala	Pro	Ser	Gly	Thr	Thr	Tyr	Tyr	Pro	Thr	Trp	Ala	Lys	Gly
1				5				10					15		

<210> 70
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C10 HC CDR3

<400> 70

Tyr	Pro	Ile	Asp	Pro	Gly	Ser	Asn	Ile
1			5					

<210> 71
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 HC CDR1

<400> 71

Ser	Tyr	Ala	Ile	Asp
1			5	

<210> 72
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 HC CDR2

<400> 72

Val	Ile	Ala	Pro	Ser	Ser	Thr	Thr	Tyr	Tyr	Pro	Thr	Trp	Ala	Lys	Gly
1				5				10					15		

<210> 73
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 HC CDR3

<400> 73

Tyr Pro Ile Asp Pro Gly Ser Asn Val
1 5

<210> 74
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 HC CDR1

<400> 74

Ser His Ala Val Asp
1 5

<210> 75
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 HC CDR2

<400> 75

Val Ile Gly Pro Gly Gly Asn Thr Tyr Tyr Ala Ser Trp Ala Lys Gly
1 5 10 15

<210> 76
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 HC CDR3

<400> 76

Tyr Pro Ile Tyr Ser Gly Asp Asn Ile
1 5

<210> 77
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 HC CDR1

<400> 77

Asn Tyr Ala Met Asp
1 5

<210> 78
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 HC CDR2

<400> 78

Val Ile Ala Pro Asn Asp Ala Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
1 5 10 15

<210> 79
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 HC CDR3

<400> 79

Tyr Pro Ile Asp Val Gly Ala Asn Val
1 5

<210> 80
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C11 HC CDR1

<400> 80

Ser His Ala Met Asp
1 5

<210> 81
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> C11 HC CDR2

<400> 81

Val Ile Ala Pro Asn Asp Ala Thr Tyr Tyr Pro Thr Trp Ala Arg Gly
1 5 10 15

<210> 82
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> C11 HC CDR3

<400> 82

Tyr Pro Ile Asp Ala Gly Ala Asn Val
1 5

<210> 83
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C4 HC CDR1

<400> 83

Ser Ser Tyr Trp Ile Cys
1 5

<210> 84
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> C4 HC CDR2

<400> 84

Cys Ile His Tyr Gly Ser Ser Gly Thr Ala Tyr Tyr Ala Ser Trp Val
1 5 10 15

Asn Gly

<210> 85

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C4 HC CDR3

<400> 85

Phe Leu Ser Asp Met Tyr Tyr Tyr Asn Leu
1 5 10

<210> 86

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> C5 HC CDR1

<400> 86

Gly Ala Trp Met Asn
1 5

<210> 87

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> C5 HC CDR2

<400> 87

Val Val Ser Ser Asp Asp Asn Ile Tyr Tyr Ala Asp Trp Ala Lys Gly
1 5 10 15

<210> 88

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> C5 HC CDR3

<400> 88

Asn Leu Gly Thr Ile
1 5

<210> 89
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C9 HC CDR1

<400> 89

Ser Ser Tyr Trp Ile Cys
1 5

<210> 90
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> C9 HC CDR2

<400> 90

Cys Ile Tyr Gln Ser Gly Asp Gly Arg Thr Trp Tyr Ala Ser Trp Ala
1 5 10 15

Glu Gly

<210> 91
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> C9 HC CDR3

<400> 91

Cys Pro His Asn Thr Tyr Ser His Phe Asp Leu
1 5 10

<210> 92
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> C26 HC CDR1

<400> 92

Asn Tyr Trp Met Ser
1 5

<210> 93
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> C26 HC CDR2

<400> 93

Cys Ile Asp Ile Gly Ser Asp Asp Thr Tyr Tyr Ala Ser Trp Ala Lys
1 5 10 15

Gly

<210> 94
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> C26 HC CDR3

<400> 94

Ser Gly Gly Leu
1

<210> 95
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> C27 HC CDR1

<400> 95

Asn Ala Trp Met Asn
1 5

<210> 96

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> C27 HC CDR2

<400> 96

Thr Thr Thr Asp Asp Asp Thr Ile Tyr Tyr Ala Asn Trp Ala Lys Gly
1 5 10 15

<210> 97

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> C27 HC CDR3

<400> 97

Gly Arg Ile
1

<210> 98

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> C17 HC CDR1

<400> 98

Ser Asn Ala Met Asn
1 5

<210> 99

<211> 16

<212> PRT
<213> Artificial Sequence

<220>
<223> C17 HC CDR2

<400> 99

Ser	Met	Tyr	Thr	Asp	Gly	Thr	Thr	Tyr	Tyr	Ala	Asn	Trp	Ala	Lys	Gly
1				5				10						15	

<210> 100
<211> 3
<212> PRT
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<220>
<223> C17 HC CDR3

<400> 100

Gly Asp Ile
1

<210> 101
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C8 LC CDR1

<400> 101

Gln	Ser	Ser	Gln	Ser	Val	Tyr	Asp	Asn	Asn	Asp	Leu	Ala
1			5					10				

<210> 102
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C8 LC CDR2

<400> 102

Leu Ala Ser Ser Leu Asp Ser
1 5

<210> 103
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C8 LC CDR3

<400> 103

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

<210> 104
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C24 LC CDR1

<400> 104

Gln Ser Ser Gln Ser Val Tyr Asp Asn Asn Asp Leu Gly
1 5 10

<210> 105
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C24 LC CDR2

<400> 105

Leu Ala Ser Ser Leu Asp Ser
1 5

<210> 106
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C24 LC CDR3

<400> 106

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

<210> 107
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C25 LC CDR1

<400> 107

Gln Ser Ser Gln Ser Val Tyr Asp Asn Asn Asp Leu Ala
1 5 10

<210> 108
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C25 LC CDR2

<400> 108

Leu Ala Ser Ser Leu Asp Ser
1 5

<210> 109
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C25 LC CDR3

<400> 109

Ala Gly Gly Tyr Asn Gly Asp Ile Tyr Thr
1 5 10

<210> 110
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 LC CDR1

<400> 110

Gln Ala Ser Glu Ser Val Asp Tyr Asn Asn Gln Leu Ser
1 5 10

<210> 111
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 LC CDR2

<400> 111

Tyr Val Ser Thr Leu Asp Ser
1 5

<210> 112
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C7 LC CDR3

<400> 112

Gln Gly Gly Tyr Pro Tyr Asn Ile Tyr Pro
1 5 10

<210> 113
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 LC CDR1

<400> 113

Gln Ser Ser Glu Ser Val Asp Tyr Asn Asn Gln Leu Ser
1 5 10

<210> 114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C6 LC CDR2

<400> 114

Tyr Val Ser Thr Leu Asp Ser
1 5

<210> 115

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C6 LC CDR3

<400> 115

Gln Gly Gly Tyr Ile Ser Asn Ile Tyr Pro
1 5 10

<210> 116

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C1 LC CDR1

<400> 116

Gln Ser Ser Glu Ser Val Asp Asn Asn Asn Gln Leu Ser
1 5 10

<210> 117

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> C1 LC CDR2

<400> 117

Tyr Val Ser Thr Leu Asp Ser
1 5

<210> 118

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C1 LC CDR3

<400> 118

Gln	Gly	Gly	Tyr	Ile	Ser	Asn	Leu	Tyr	Pro
1				5					10

<210> 119

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C16 LC CDR1

<400> 119

Gln	Ser	Ser	Glu	Ser	Val	Gly	Met	Asn	Asn	Gln	Leu	Ser
1				5								10

<210> 120

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> C16 LC CDR2

<400> 120

Tyr	Val	Ser	Thr	Leu	Asp	Ser
1				5		

<210> 121

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C16 LC CDR3

<400> 121

Gln	Gly	Gly	Tyr	Ile	Ser	Asn	Leu	Tyr	Pro
1				5					10

<210> 122

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C20 LC CDR1

<400> 122

Gln	Ser	Ser	Glu	Ser	Val	Asp	Met	Asn	Asn	Gln	Leu	Ser
1				5					10			

<210> 123

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> C20 LC CDR2

<400> 123

Tyr	Val	Ser	Thr	Leu	Asp	Ser
1				5		

<210> 124

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C20 LC CDR3

<400> 124

Gln	Gly	Gly	Tyr	Ile	Ser	Asn	Leu	Tyr	Pro
1				5					10

<210> 125

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C22 LC CDR1

<400> 125

Gln	Ser	Ser	Glu	Ser	Val	Asp	Met	Asn	Asn	Gln	Leu	Ser
1				5					10			

<210> 126

<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> C22 LC CDR2

<400> 126

Tyr Val Ser Thr Leu Asp Ser
1 5

<210> 127
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C22 LC CDR3

<400> 127

Gln Gly Gly Tyr Ile Ser Asn Leu Tyr Pro
1 5 10

<210> 128
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C10 LC CDR1

<400> 128

Gln Ser Ser Glu Ser Val Asp Tyr Gly Asn Gln Leu Ser
1 5 10

<210> 129
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C10 LC CDR2

<400> 129

Tyr Val Ser Ile Leu Asp Ala
1 5

<210> 130
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C10 LC CDR3

<400> 130

Gln Gly Gly Tyr Ile Ser Asn Leu Tyr Pro
1 5 10

<210> 131
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 LC CDR1

<400> 131

Gln Ser Ser Glu Ser Val Asp Tyr Gly Asn Gln Leu Ser
1 5 10

<210> 132
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 LC CDR2

<400> 132

Tyr Val Ser Ile Leu Asp Ala
1 5

<210> 133
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C12 LC CDR3

<400> 133

Gln Gly Gly Tyr Ile Ser Asn Leu Tyr Pro
1 5 10

<210> 134
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 LC CDR1

<400> 134

Gln Ser Ser Glu Ser Val Asp Asn Asn Asn Gln Leu Ser
1 5 10

<210> 135
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 LC CDR2

<400> 135

Tyr Ala Ser Thr Leu Asp Ser
1 5

<210> 136
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C13 LC CDR3

<400> 136

Gln Gly Gly Thr Ala Thr Asn Ile Tyr Pro
1 5 10

<210> 137
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 LC CDR1

<400> 137

Gln Ser Ser Glu Ser Val Asp Tyr Asn Asn Gln Leu Ser
1 5 10

<210> 138
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 LC CDR2

<400> 138

Tyr Val Ser Thr Leu Asp Ser
1 5

<210> 139
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C14 LC CDR3

<400> 139

Gln Gly Gly Tyr Ile Ser Asn Leu Tyr Pro
1 5 10

<210> 140
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C11 LC CDR1

<400> 140

Gln Ser Ser Glu Ser Val Asp Tyr Asn Asn Gln Leu Ser
1 5 10

<210> 141
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C11 LC CDR2

<400> 141

Tyr Val Ser Thr Leu Asp Ser
1 5

<210> 142

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C11 LC CDR3

<400> 142

Gln Gly Gly Tyr Ile Ser Asn Leu Tyr Pro
1 5 10

<210> 143

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C4 LC CDR1

<400> 143

Gln Ala Ser Gln Ser Ile Tyr Asn Asn Asn Gln Leu Ser
1 5 10

<210> 144

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> C4 LC CDR2

<400> 144

Tyr Ala Ser Thr Leu Ala Ser
1 5

<210> 145

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C4 LC CDR3

<400> 145

Gln	Gly	Gln	Phe	Asn	Cys	Arg	Ser	Ala	Asp	Cys	His	Ala
1				5					10			

<210> 146

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> C5 LC CDR1

<400> 146

Gln	Ser	Ser	Gln	Ser	Val	Trp	Ser	Asn	Tyr	Leu	Ser
1			5						10		

<210> 147

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> C5 LC CDR2

<400> 147

Gly	Thr	Ser	Lys	Leu	Pro	Ser
1			5			

<210> 148

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C5 LC CDR3

<400> 148

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

<210> 149

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> C9 LC CDR1

<400> 149

Gln Ala Ser Gln Ser Ile Asn Ser Trp Leu Ser
1 5 10

<210> 150

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> C9 LC CDR2

<400> 150

Gly Ala Ser Asn Leu Ala Ser
1 5

<210> 151

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> C9 LC CDR3

<400> 151

Leu Gly Tyr Tyr Tyr Ser Ser Tyr Asn Ser Val Gly Phe Trp Ala
1 5 10 15

<210> 152

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> C26 LC CDR1

<400> 152

Gln Ala Ser Gln Ser Val Tyr Asn Asn Asn Asp Leu Ala
1 5 10

<210> 153

<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> C26 LC CDR2

<400> 153

Glu Ala Ser Lys Leu Ala Ser
1 5

<210> 154
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C26 LC CDR3

<400> 154

Ala Gly Gly Trp Ser Gly Asn Phe Tyr Val
1 5 10

<210> 155
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C27 LC CDR1

<400> 155

Gln Ala Ser Gln Ser Val Tyr Asp Gly Asn Trp Leu Cys
1 5 10

<210> 156
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C27 LC CDR2

<400> 156

Lys Ala Ser Thr Leu Glu Ser
1 5

<210> 157
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C27 LC CDR3

<400> 157

Gln Gly Gly Phe Thr Ser Asn Ile Tyr Pro
1 5 10

<210> 158
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> C17 LC CDR1

<400> 158

Gln Ser Ser Gln Ser Val Tyr Asn Asn Asn Trp Leu Ala
1 5 10

<210> 159
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C17 LC CDR2

<400> 159

Gly Thr Ser Glu Leu Ala Ser
1 5

<210> 160
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> C17 LC CDR3

<400> 160

Leu Gly Thr Tyr Ser Ser Asn Ile His Val
1 5 10

<210> 161
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Cys-apelin-17

<400> 161

Cys	Lys	Phe	Arg	Arg	Gln	Arg	Pro	Arg	Leu	Ser	His	Lys	Gly	Pro	Met
1				5					10					15	

Pro Phe

<210> 162
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> pyr-apelin-13-Cys

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Glu is a pyroglutamic acid

<400> 162

Glu	Arg	Pro	Arg	Leu	Ser	His	Lys	Gly	Pro	Met	Pro	Phe	Cys
1				5					10				

<210> 163
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> pyr-apelin-13

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Glu is a pyroglutamic acid

<400> 163

Glu Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro Phe
1 5 10

<210> 164

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Cys(Q) apelin-13

<400> 164

Cys Gln Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro Phe
1 5 10

<210> 165

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> biotin-apelin-13

<400> 165

Gln Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro Phe
1 5 10

<210> 166

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> biotin-apelin-17

<400> 166

Lys Phe Arg Arg Gln Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro
1 5 10 15

Phe

<210> 167

<211> 14

<212> PRT
<213> Artificial Sequence

<220>
<223> biotin-apelin-(27-14)

<400> 167

Gly Pro Gly Ala Trp Gln Gly Gly Arg Arg Lys Phe Arg Arg
1 5 10

<210> 168
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> HC CDR1

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Xaa is Ser or Thr

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is Met or Val

<400> 168

Xaa Arg Asn Xaa Ser
1 5

<210> 169
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> HC CDR2

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Xaa is Tyr or Phe

<220>
<221> MISC_FEATURE
<222> (13)..(13)

<223> Xaa is Lys or Gln

<400> 169

Ser Ile Gly Ser Ser Pro Trp Xaa Ala Ser Trp Ala Xaa Gly
1 5 10

<210> 170

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> HC CDR3

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa is Ala and Gly

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> Xaa is Val or Ile

<400> 170

Gly Gly Tyr Arg Pro Gly Xaa Ser Xaa
1 5

<210> 171

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> LC CDR1

<220>

<221> MISC_FEATURE

<222> (13)..(13)

<223> Xaa is Ala or Gly

<400> 171

Gln Ser Ser Gln Ser Val Tyr Asp Asn Asn Asp Leu Xaa
1 5 10

<210> 172

<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> LC CDR3

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa is Ser or Asn

<400> 172

Ala Gly Gly Tyr Xaa Gly Asp Ile Tyr Thr
1 5 10

<210> 173
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> HC CDR1

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Xaa is Asn or Ser

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is Met or Ile

<400> 173

Xaa Tyr Ala Xaa Asp
1 5

<210> 174
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> HC CDR2

<220>

<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa is Arg, Gly, or His

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa is Arg, Ala, or Tyr

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa is Tyr or Cys

<400> 174

Val	Ile	Ala	Pro	Asn	Xaa	Xaa	Thr	Xaa	Tyr	Pro	Thr	Trp	Ala	Arg	Gly
1				5					10					15	

<210> 175
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> HC CDR3

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is Glu or Asp

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa is Pro, Ala, Ser, or Thr

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa is Ala or Ser

<400> 175

Tyr	Pro	Ile	Xaa	Xaa	Gly	Xaa	Asn	Ile
1				5				

<210> 176
<211> 13
<212> PRT
<213> Artificial Sequence

<220>

<223> LC CDR1

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa is Asp or Gly

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Xaa is Tyr, Asn, or Met

<400> 176

Gln Ser Ser Glu Ser Val Xaa Xaa Asn Asn Gln Leu Ser
1 5 10

<210> 177

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> HC CDR2

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Xaa is Gly or Ser

<400> 177

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

<210> 178

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> HC CDR2

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> Xaa is Ile or Val

<400> 178

Tyr Pro Ile Asp Pro Gly Ser Asn Xaa
1 5

<210> 179

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> HC CDR1

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Xaa is Asn or Ser

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa is Tyr or His

<400> 179

Xaa Xaa Ala Met Asp
1 5

<210> 180

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> HC CDR3

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Xaa is Val or Ala

<400> 180

Tyr Pro Ile Asp Xaa Gly Ala Asn Val
1 5

<210> 181

<211> 12

<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 1-12

<400> 181

Gln Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro
1 5 10

<210> 182
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 2-13

<400> 182

Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro Phe
1 5 10

<210> 183
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 3-13

<400> 183

Pro Arg Leu Ser His Lys Gly Pro Met Pro Phe
1 5 10

<210> 184
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 4-13

<400> 184

Arg Leu Ser His Lys Gly Pro Met Pro Phe
1 5 10

<210> 185
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 5-13

<400> 185

Leu Ser His Lys Gly Pro Met Pro Phe
1 5

<210> 186
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 6-13

<400> 186

Ser His Lys Gly Pro Met Pro Phe
1 5

<210> 187
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 7-13

<400> 187

His Lys Gly Pro Met Pro Phe
1 5

<210> 188
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 8-13

<400> 188

Lys Gly Pro Met Pro Phe
1 5

<210> 189
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 9-13

<400> 189

Gly Pro Met Pro Phe
1 5

<210> 190
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 10-13

<400> 190

Pro Met Pro Phe
1

<210> 191
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Apelin Peptide 11-13

<400> 191

Met Pro Phe
1

<210> 192
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide 8A

<400> 192

Ala Gly Pro Met Pro Phe
1 5

<210> 193
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide 9A

<400> 193

Lys Ala Pro Met Pro Phe
1 5

<210> 194
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide 10A

<400> 194

Lys Gly Ala Met Pro Phe
1 5

<210> 195
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide 11A

<400> 195

Lys Gly Pro Ala Pro Phe
1 5

<210> 196
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide 12A

<400> 196

Lys Gly Pro Met Ala Phe
1 5

<210> 197

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Peptide 13A

<400> 197

Lys Gly Pro Met Pro Ala
1 5

<210> 198

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-11

<400> 198

Gln Arg Pro Arg Leu Ser His Lys Gly Pro Met
1 5 10

<210> 199

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-10

<400> 199

Gln Arg Pro Arg Leu Ser His Lys Gly Pro
1 5 10

<210> 200

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-9

<400> 200

Gln Arg Pro Arg Leu Ser His Lys Gly
1 5

<210> 201

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-8

<400> 201

Gln Arg Pro Arg Leu Ser His Lys
1 5

<210> 202

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-7

<400> 202

Gln Arg Pro Arg Leu Ser His
1 5

<210> 203

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-6

<400> 203

Gln Arg Pro Arg Leu Ser
1 5

<210> 204

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-5

<400> 204

Gln Arg Pro Arg Leu
1 5

<210> 205

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Apelin Peptide 1-4

<400> 205

Gln Arg Pro Arg
1

<210> 206

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> 1A

<400> 206

Ala Arg Pro Arg Leu
1 5

<210> 207

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> 2A

<400> 207

Gln Ala Pro Arg Leu
1 5

<210> 208

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> 3A

<400> 208

Gln Arg Ala Arg Leu
1 5

<210> 209
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> 4A

<400> 209

Gln Arg Pro Ala Leu
1 5

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

<220>
<223> 5A

<400> 210

Gln Arg Pro Arg Ala
1 5

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

<220>
<223> Humanized VH

<400> 211

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

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

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

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly Arg Phe
50 55 60

Thr Ile Ser Arg Asp Asn Ser Asn Thr Leu Tyr Leu Gln Met Asn Ser
65 70 75 80

Leu Thr Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys Gly Gly Tyr
85 90 95

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

Ser

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

<220>
<223> Humanized VH

<400> 212

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

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

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

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly Arg Phe
50 55 60

Thr Ile Ser Arg Asp Asn Ser Asn Thr Val Tyr Leu Gln Met Asn Ser
65 70 75 80

Leu Thr Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr
85 90 95

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

Ser

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

<220>
<223> Humanized VH

<400> 213

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

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

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

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly Arg Phe
50 55 60

Thr Ile Ser Arg Asp Asn Ser Asn Thr Val Tyr Leu Gln Met Asn Ser
65 70 75 80

Leu Thr Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr
85 90 95

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

Ser

<210> 214
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized VH

<400> 214

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

Leu Arg Leu Ser Cys Thr Val Ser Gly Ile Asp Leu Tyr Ser Asn Arg
20 25 30

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

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly Arg Phe
50 55 60

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

Pro Thr Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr
85 90 95

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

Ser

<210> 215
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized VL

<400> 215

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

Asp Arg Val Thr Ile Thr Cys Gln Ser Ser Gln Ser Ile Tyr Asp Asn
20 25 30

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

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

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

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

Asp Ile Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 216

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanized VL

<400> 216

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

Asp Arg Val Thr Ile Ala Cys Gln Ser Ser Gln Ser Val Tyr Asp Asn
20 25 30

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

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

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
65 70 75 80

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

Asp Ile Tyr Thr Phe Gly Gly Gly Thr Glu Val Val Val Glu
100 105 110

<210> 217
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> B24 Heavy Chain Variable Region

<400> 217

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

Leu Arg Leu Ser Cys Thr Val Ser Gly Ile Asp Leu Tyr Thr Asn Arg
20 25 30

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

Ser Ile Gly Ser Ser Pro Trp Tyr Ala Ser Trp Ala Gln Gly Arg Phe
50 55 60

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

Pro Thr Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr
85 90 95

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

Ser

<210> 218
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> B25 Heavy Chain Variable Region

<400> 218

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

Leu Arg Leu Ser Cys Thr Val Ser Gly Ile Asp Leu Tyr Thr Asn Arg
20 25 30

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

Ser Ile Gly Ser Ser Pro Trp Phe Ala Ser Trp Ala Leu Gly Arg Phe
50 55 60

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

Pro Thr Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Lys Gly Gly Tyr
85 90 95

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

Ser

<210> 219
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> B24 Light Chain Variable Region

<400> 219

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

Asp Arg Val Thr Ile Thr Cys Gln Ser Ser Gln Ser Ile Tyr Asp Asn
20 25 30

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

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

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

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

Asp Ile Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 220
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> B25 Light Chain Variable Region

<400> 220

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

Asp Arg Val Thr Ile Thr Cys Gln Ser Ser Gln Ser Ile Tyr Asp Asn
20 25 30

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

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

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

Gln Pro Glu Asp Val Ala Thr Tyr Tyr Cys Ala Gly Gly Tyr Asn Gly
85 90 95

Asp Ile Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 221
<211> 77
<212> PRT
<213> Homo sapiens

<400> 221

Met Asn Leu Arg Leu Cys Val Gln Ala Leu Leu Leu Leu Trp Leu Ser
1 5 10 15

Leu Thr Ala Val Cys Gly Gly Ser Leu Met Pro Leu Pro Asp Gly Asn
20 25 30

Gly Leu Glu Asp Gly Asn Val Arg His Leu Val Gln Pro Arg Gly Ser
35 40 45

Arg Asn Gly Pro Gly Pro Trp Gln Gly Gly Arg Arg Lys Phe Arg Arg
50 55 60

Gln Arg Pro Arg Leu Ser His Lys Gly Pro Met Pro Phe
65 70 75