

SEQUENCE LISTING

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<120> ANTI-TIGIT ANTIBODIES

<130> 23808-US-PCT

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<150> 62/126,733

<151> 2015-03-02

<150> 62/038,912

<151> 2014-08-19

<160> 167

<170> PatentIn version 3.5

<210> 1

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 1

Ser	Asp	Tyr	Trp	Gly
1				5

<210> 2

<211> 16

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 2

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

<210> 3
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 3
Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly Tyr
1 5 10 15

Phe Asp Phe

<210> 4
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 4
Lys Ala Ser Gln Ser Ile His Lys Asn Leu Ala
1 5 10

<210> 5
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 5
Tyr Ala Asn Ser Leu Gln Thr
1 5

<210> 6
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 6

Gln Gln Tyr Tyr Ser Gly Trp Thr
1 5

<210> 7

<211> 127

<212> PRT

<213> Rattus norvegicus

<400> 7

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

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

Tyr Trp Gly Trp Ile Arg Lys Phe Pro Gly Asn Lys Met Glu Trp Met
35 40 45

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

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

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

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Pro Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 8

<211> 106

<212> PRT

<213> Rattus norvegicus

<400> 8

Asp Ile Gln Met Thr Gln Ser Pro Ser Leu Leu Ser Ala Ser Val Gly

1	5	10	15
Asp Arg Val Thr Leu Asn Cys Lys Ala Ser Gln Ser Ile His Lys Asn	20	25	30
Leu Ala Trp Tyr Gln Gln Lys Leu Gly Glu Ala Pro Lys Phe Leu Ile	35	40	45
Tyr Tyr Ala Asn Ser Leu Gln Thr Gly Ile Pro Ser Arg Phe Ser Gly	50	55	60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly Leu Gln Pro	65	70	75
Glu Asp Val Ala Thr Tyr Phe Cys Gln Gln Tyr Tyr Ser Gly Trp Thr	85	90	95
Phe Gly Gly Gly Thr Lys Val Glu Leu Lys	100	105	

<210> 9

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 9

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Asp	20	25	30
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Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile	35	40	45
---	----	----	----

Gly Phe Ile Thr Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu Lys	50	55	60
---	----	----	----

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 10

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 10

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 11
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 11
Glu Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 12
<211> 127
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 12

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 13

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 13

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 14

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 14

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 15

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 15

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser

115

120

125

<210> 16

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 16

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 17

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 17

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 18

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 18

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

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

Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile

35

40

45

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
 100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
 115 120 125

<210> 19

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 Humanized antibody chain polypeptide

<400> 19

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 20

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 20

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 21
<211> 127
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 21

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 22
<211> 127
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 22

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 23

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 23

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 24

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 24

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

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

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

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

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

Lys Leu His Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 25
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 25
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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

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

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

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

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

<210> 26
<211> 106
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 26

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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile
35 40 45

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

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

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

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

<210> 27

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 27

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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile
35 40 45

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

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

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

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

<210> 28

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

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

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

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

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

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys

<210> 29
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Humanized antibody chain polypeptide

<400> 29
 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 Lys Ala Ser Gln Ser Ile His Lys Asn
 20 25 30

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

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

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

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

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

<210> 30
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Humanized antibody chain polypeptide

<400> 30
 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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

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

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

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

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

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

<210> 31
<211> 244
<212> PRT
<213> Homo sapiens

<400> 31
Met Arg Trp Cys Leu Leu Leu Ile Trp Ala Gln Gly Leu Arg Gln Ala
1 5 10 15

Pro Leu Ala Ser Gly Met Met Thr Gly Thr Ile Glu Thr Thr Gly Asn
20 25 30

Ile Ser Ala Glu Lys Gly Gly Ser Ile Ile Leu Gln Cys His Leu Ser
35 40 45

Ser Thr Thr Ala Gln Val Thr Gln Val Asn Trp Glu Gln Gln Asp Gln
50 55 60

Leu Leu Ala Ile Cys Asn Ala Asp Leu Gly Trp His Ile Ser Pro Ser
65 70 75 80

Phe Lys Asp Arg Val Ala Pro Gly Pro Gly Leu Gly Leu Thr Leu Gln

85

90

95

Ser Leu Thr Val Asn Asp Thr Gly Glu Tyr Phe Cys Ile Tyr His Thr
 100 105 110

Tyr Pro Asp Gly Thr Tyr Thr Gly Arg Ile Phe Leu Glu Val Leu Glu
 115 120 125

Ser Ser Val Ala Glu His Gly Ala Arg Phe Gln Ile Pro Leu Leu Gly
 130 135 140

Ala Met Ala Ala Thr Leu Val Val Ile Cys Thr Ala Val Ile Val Val
 145 150 155 160

Val Ala Leu Thr Arg Lys Lys Lys Ala Leu Arg Ile His Ser Val Glu
 165 170 175

Gly Asp Leu Arg Arg Lys Ser Ala Gly Gln Glu Glu Trp Ser Pro Ser
 180 185 190

Ala Pro Ser Pro Pro Gly Ser Cys Val Gln Ala Glu Ala Ala Pro Ala
 195 200 205

Gly Leu Cys Gly Glu Gln Arg Gly Glu Asp Cys Ala Glu Leu His Asp
 210 215 220

Tyr Phe Asn Val Leu Ser Tyr Arg Ser Leu Gly Asn Cys Ser Phe Phe
 225 230 235 240

Thr Glu Thr Gly

<210> 32

<211> 245

<212> PRT

<213> *Macaca fascicularis*

<400> 32

Met Arg Trp Cys Leu Phe Leu Ile Trp Ala Gln Gly Leu Arg Gln Ala
 1 5 10 15

Pro Leu Ala Ser Gly Met Met Thr Gly Thr Ile Glu Thr Thr Gly Asn
20 25 30

Ile Ser Ala Lys Lys Gly Gly Ser Val Ile Leu Gln Cys His Leu Ser
35 40 45

Ser Thr Met Ala Gln Val Thr Gln Val Asn Trp Glu Gln His Asp His
50 55 60

Ser Leu Leu Ala Ile Arg Asn Ala Glu Leu Gly Trp His Ile Tyr Pro
65 70 75 80

Ala Phe Lys Asp Arg Val Ala Pro Gly Pro Gly Leu Gly Leu Thr Leu
85 90 95

Gln Ser Leu Thr Met Asn Asp Thr Gly Glu Tyr Phe Cys Thr Tyr His
100 105 110

Thr Tyr Pro Asp Gly Thr Tyr Arg Gly Arg Ile Phe Leu Glu Val Leu
115 120 125

Glu Ser Ser Val Ala Glu His Ser Ala Arg Phe Gln Ile Pro Leu Leu
130 135 140

Gly Ala Met Ala Met Met Leu Val Val Ile Cys Ile Ala Val Ile Val
145 150 155 160

Val Val Val Leu Ala Arg Lys Lys Lys Ser Leu Arg Ile His Ser Val
165 170 175

Glu Ser Gly Leu Gln Arg Lys Ser Thr Gly Gln Glu Glu Gln Ile Pro
180 185 190

Ser Ala Pro Ser Pro Pro Gly Ser Cys Val Gln Ala Glu Ala Ala Pro
195 200 205

Ala Gly Leu Cys Gly Glu Gln Gln Gly Asp Asp Cys Ala Glu Leu His
210 215 220

Asp Tyr Phe Asn Val Leu Ser Tyr Arg Ser Leu Gly Ser Cys Ser Phe

225 230 235 240

 Phe Thr Glu Thr Gly
 245

 <210> 33
 <211> 447
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 Antibody chain polypeptide

 <400> 33
 Gln Val Gln Leu Val Gln Ser Gly Val Glu Val Lys Lys Pro Gly Ala
 1 5 10 15

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

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

 Gly Gly Ile Asn Pro Ser Asn Gly Gly Thr Asn Phe Asn Glu Lys Phe
 50 55 60

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

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

 Ala Arg Arg Asp Tyr Arg Phe Asp Met Gly Phe Asp Tyr Trp Gly Gln
 100 105 110

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

 Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
 130 135 140

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

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

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

Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys
 195 200 205

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro
 210 215 220

Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val
 225 230 235 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
 245 250 255

Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu
 260 265 270

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

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

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

Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile
 325 330 335

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

Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu

355

360

365

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

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

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

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

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

<210> 34

<211> 218

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 Antibody chain polypeptide

<400> 34

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Lys Gly Val Ser Thr Ser
 20 25 30

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

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

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

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Ser Arg
85 90 95

Asp Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg
100 105 110

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
115 120 125

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
130 135 140

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
145 150 155 160

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
165 170 175

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
180 185 190

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
195 200 205

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 35

<211> 440

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Antibody chain polypeptide

<400> 35

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

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

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

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

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

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

Ala Thr Asn Asp Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
100 105 110

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

Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp
130 135 140

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

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

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys
180 185 190

Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp
195 200 205

Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala
210 215 220

Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
225 230 235 240

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
245 250 255

Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val
260 265 270

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
275 280 285

Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
290 295 300

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly
305 310 315 320

Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
325 330 335

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

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
355 360 365

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
370 375 380

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
385 390 395 400

Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe
405 410 415

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
420 425 430

Ser Leu Ser Leu Ser Leu Gly Lys
435 440

<210> 36

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

<220>

<223> Description of Artificial Sequence: Synthetic
Antibody chain polypeptide

<400> 36

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
20 25 30

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

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

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

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Ser Ser Asn Trp Pro Arg
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

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

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 37

<211> 129

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 37

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Ala
115 120 125

Ser

<210> 38

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 38

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 39

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 39

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

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

Tyr Trp Gly Trp Ile Arg Lys Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 40

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 40

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 41

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 41

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

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

Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Met Glu Trp Ile
35 40 45

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 42

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 42

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

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

Tyr Trp Gly Trp Ile Arg Lys Pro Pro Gly Lys Lys Met Glu Trp Ile
35 40 45

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser

115

120

125

<210> 43

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 43

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

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

Tyr	Trp	Gly	Trp	Ile	Arg	Gln	Phe	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile
		35				40						45			

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

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

Lys	Leu	Ser	Ser	Val	Thr	Ala	Asp	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala
				85					90					95	

Arg	Met	Pro	Ser	Phe	Ile	Thr	Leu	Ala	Ser	Leu	Ser	Thr	Trp	Glu	Gly
			100					105					110		

Tyr	Phe	Asp	Phe	Trp	Gly	Gln	Gly	Thr	Met	Val	Thr	Val	Ser	Ser
		115					120					125		

<210> 44

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 44

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

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

Tyr Trp Gly Trp Ile Arg Lys Pro Pro Gly Lys Lys Met Glu Trp Ile
35 40 45

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 45

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 45

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

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

Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile

35

40

45

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
 100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
 115 120 125

<210> 46

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 Humanized antibody chain polypeptide

<400> 46

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 47

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 47

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

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

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

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

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

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Trp Glu Gly
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 48
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 48
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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

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

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

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

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

<210> 49
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 49
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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile
35 40 45

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

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

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

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

<210> 50

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 50

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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

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

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

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

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

<210> 51
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 51
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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile
35 40 45

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

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

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

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

<210> 52
<211> 106
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 52

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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

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

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

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

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

<210> 53

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Leader sequence heavy chains peptide

<400> 53

Met Glu Trp Ser Trp Val Phe Leu Phe Phe Leu Ser Val Thr Thr Gly
1 5 10 15

Val His Ser

<210> 54

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Leader sequence light chains peptide

<400> 54

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

Asp	Ala	Arg	Cys
			20

<210> 55

<211> 325

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Heavy chain constant domain-IgG4 S228P polypeptide

<400> 55

Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser	Arg	Ser	Thr
1				5				10						15	

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

Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val
		35					40					45			

His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser
	50					55					60				

Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Lys	Thr	Tyr	Thr
65					70					75					80

Cys	Asn	Val	Asp	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Arg	Val
				85					90					95	

Glu	Ser	Lys	Tyr	Gly	Pro	Pro	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Phe
			100					105					110		

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
130 135 140

Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
145 150 155 160

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
165 170 175

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
180 185 190

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser
195 200 205

Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
210 215 220

Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln
225 230 235 240

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
245 250 255

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
260 265 270

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu
275 280 285

Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser
290 295 300

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
305 310 315 320

Leu Ser Leu Gly Lys

<210> 56
 <211> 105
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Kappa light chain constant domain polypeptide

<400> 56
 Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
 1 5 10 15

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

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

Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
 50 55 60

Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
 65 70 75 80

Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
 85 90 95

Thr Lys Ser Phe Asn Arg Gly Glu Cys
 100 105

<210> 57
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 57
 Gly Tyr Ser Ile Thr Ser Asp Tyr Ala Trp Asn
 1 5 10

<210> 58
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 58
Tyr Ile Ser Asn Ser Gly Ser Ala Ser Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 59
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 59
Leu Ile Tyr Tyr Asp Tyr Gly Gly Ala Met Asn Phe
1 5 10

<210> 60
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 60
Lys Ala Ser Gln Gly Val Ser Thr Thr Val Ala
1 5 10

<210> 61
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 61
Ser Ala Ser Tyr Arg Tyr Thr
1 5

<210> 62
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 62
Gln His Tyr Tyr Ser Thr Pro Trp Thr
1 5

<210> 63
<211> 121
<212> PRT
<213> Mus musculus

<400> 63
Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15

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

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp
35 40 45

Met Gly Tyr Ile Ser Asn Ser Gly Ser Ala Ser Tyr Asn Pro Ser Leu
50 55 60

Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe
65 70 75 80

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

Ala Thr Leu Ile Tyr Tyr Asp Tyr Gly Gly Ala Met Asn Phe Trp Gly
100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 64
<211> 107
<212> PRT
<213> Mus musculus

<400> 64
Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly
1 5 10 15

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

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

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

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

Glu Asp Leu Ala Val Tyr Tyr Cys Gln His Tyr Tyr Ser Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 65
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 65
Tyr Ala Ser Asn Leu Gln Thr
1 5

<210> 66

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

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 66

Tyr Ala Ser Ser Leu Gln Thr
1 5

<210> 67

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 67

Tyr Ala Ser Thr Leu Gln Thr
1 5

<210> 68

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 68

Tyr Ala Thr Thr Leu Gln Thr
1 5

<210> 69

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 69

Tyr Ala Ser Tyr Leu Gln Thr
1 5

<210> 70
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 70
Tyr Ala Asn Gln Leu Gln Thr
1 5

<210> 71
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 71
Tyr Ala Gly Ser Leu Gln Thr
1 5

<210> 72
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 72
Tyr Ala Ser Gln Leu Gln Thr
1 5

<210> 73
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 73
Tyr Ala Asp Ser Leu Gln Thr
1 5

<210> 74
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 74
Gln Gln Tyr Tyr Ser Gly Phe Thr
1 5

<210> 75
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 75
Gln Gln Tyr Tyr Ser Gly Tyr Thr
1 5

<210> 76
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 76
Gln Gln Tyr Tyr Ser Gly Ile Thr
1 5

<210> 77
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 77

Gln Gln Tyr Tyr Ser Gly Val Thr
1 5

<210> 78

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 78

Gln Gln Tyr Tyr Ser Gly Leu Thr
1 5

<210> 79

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 79

Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Phe Glu Gly Tyr
1 5 10 15

Phe Asp Phe

<210> 80

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 80

Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Tyr Glu Gly Tyr
1 5 10 15

Phe Asp Phe

<210> 81

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 81

Met	Pro	Ser	Phe	Ile	Thr	Leu	Ala	Ser	Leu	Ser	Thr	Ile	Glu	Gly	Tyr
1				5				10						15	

Phe Asp Phe

<210> 82

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 82

Met	Pro	Ser	Phe	Ile	Thr	Leu	Ala	Ser	Leu	Ser	Thr	Val	Glu	Gly	Tyr
1				5				10						15	

Phe Asp Phe

<210> 83

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 83

Met	Pro	Ser	Phe	Ile	Thr	Leu	Ala	Ser	Leu	Ser	Thr	Leu	Glu	Gly	Tyr
1				5				10						15	

Phe Asp Phe

<210> 84
<211> 363
<212> DNA
<213> Mus musculus

<400> 84
gatgtgcagc ttcaggagtc gggacctggc ctggtgaaac cttctcagtc tctgtccctc 60
acctgcactg tcactggcta ctcaatcacc agtgattatg cctggaactg gatccgacag 120
tttccaggaa acaaactgga gtggatgggc tacataagca acagtggtag cgctagctac 180
aaccatctc tcaaaagtcg catctctatc actcgagaca catccaagaa ccagttcttc 240
ctgcagttga attctgtgac tactgaggac acagccacat attactgtgc aaccctgac 300
tactatgatt acgggggggc tatgaacttc tggggtaag gaacctcagt caccgtctcc 360
tca 363

<210> 85
<211> 321
<212> DNA
<213> Mus musculus

<400> 85
gacattgtga tgaccagtc tcacaaattc atgtccacat cagtaggaga cagggtcagc 60
atcacctgca aggccagtca ggggtgtgagt actactgtgg cctggtatca acagaaacca 120
ggacaatctc ctaaactact gatttactcg gcacacctacc ggtacactgg agtccctgat 180
cgcttcactg gcagtggatc tgggacggat ttcactttca ccatcagcag tgtgcagtct 240
gaagacctgg cagtttatta ctgtcagcat tattatagta ctccgtggac gttcgggtgga 300
ggcaccaagc tggaatcaa a 321

<210> 86
<211> 330
<212> PRT
<213> Homo sapiens

<400> 86
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys

1	5	10	15														
Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr		
			20					25					30				
Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser		
		35					40					45					
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser		
	50					55					60						
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr		
65					70				75						80		
Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys		
			85						90					95			
Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys		
			100					105					110				
Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro		
		115					120					125					
Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys		
	130					135					140						
Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp		
145					150					155					160		
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu		
			165						170					175			
Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu		
			180					185					190				
His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn		
		195					200					205					
Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly		
	210					215					220						

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

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

<210> 87

<211> 133

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Fusion protein polypeptide

<400> 87

Gly Thr Ile Glu Thr Thr Gly Asn Ile Ser Ala Glu Lys Gly Gly Ser
1 5 10 15

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

Val Asn Trp Glu Gln Gln Asp Gln Leu Leu Ala Ile Cys Asn Ala Asp
35 40 45

Leu Gly Trp His Ile Ser Pro Ser Phe Lys Asp Arg Val Ala Pro Gly

50

55

60

Pro Gly Leu Gly Leu Thr Leu Gln Ser Leu Thr Val Asn Asp Thr Gly
 65 70 75 80

Glu Tyr Phe Cys Ile Tyr His Thr Tyr Pro Asp Gly Thr Tyr Thr Gly
 85 90 95

Arg Ile Phe Leu Glu Val Leu Glu Ser Ser Val Ala Glu His Gly Ala
 100 105 110

Arg Phe Gln Ile Pro Leu Leu Gly Ala His His His His His His His
 115 120 125

His His Gly Gly Gln
 130

<210> 88

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 88

Ser Tyr Val Met His
 1 5

<210> 89

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 89

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

Gly

<210> 90
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 90
Gly Gly Pro Tyr Gly Trp Tyr Phe Asp Val
1 5 10

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

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 91
Arg Ala Ser Glu His Ile Tyr Ser Tyr Leu Ser
1 5 10

<210> 92
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 92
Asn Ala Lys Thr Leu Ala Glu
1 5

<210> 93
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 93

Gln His His Phe Gly Ser Pro Leu Thr
1 5

<210> 94

<211> 119

<212> PRT

<213> Mus musculus

<400> 94

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

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

Val Met His Trp Val Lys Gln Lys Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asp Pro Tyr Asn Asp Gly Ala Lys Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Gly Gly Pro Tyr Gly Trp Tyr Phe Asp Val Trp Gly Ala Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 95

<211> 107

<212> PRT

<213> Mus musculus

<400> 95

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

Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu His Ile Tyr Ser Tyr
 20 25 30

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

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

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

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

Thr Phe Gly Ala Gly Thr Thr Leu Glu Leu Lys
 100 105

<210> 96

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 96

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

<210> 97

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 97

Tyr Ile Asp Pro Tyr Asn Leu Gly Ala Lys Tyr Asn Glu Lys Gly Phe
 1 5 10 15

<210> 98

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

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 98

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

<210> 99

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 99

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

<210> 100

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 100

Tyr	Ile	Asp	Pro	Tyr	Asn	Ser	Gly	Ala	Lys	Tyr	Asn	Glu	Lys	Phe	Gly
1				5					10					15	

<210> 101

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 101

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

<210> 102
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 102
Tyr Ile Asp Pro Tyr Asn Val Gly Ala Lys Tyr Asn Glu Lys Phe Gly
1 5 10 15

<210> 103
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 103
Tyr Ile Asp Pro Tyr Asn Asp Arg Ala Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 104
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 104
Tyr Ile Asp Pro Tyr Asn Asp Asn Ala Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 105

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

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 105

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

Gly

<210> 106
<211> 17
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 106

Tyr	Ile	Asp	Pro	Tyr	Asn	Asp	Glu	Ala	Lys	Tyr	Asn	Glu	Lys	Phe	Lys
1				5					10					15	

Gly

<210> 107
<211> 17
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 107

Tyr	Ile	Asp	Pro	Tyr	Asn	Asp	Leu	Ala	Lys	Tyr	Asn	Glu	Lys	Phe	Lys
1				5					10					15	

Gly

<210> 108
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 108
Tyr Ile Asp Pro Tyr Asn Asp Lys Ala Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 109
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 109
Tyr Ile Asp Pro Tyr Asn Asp Ser Ala Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 110
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 110
Tyr Ile Asp Pro Tyr Asn Asp Tyr Ala Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 111
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 111
Tyr Ile Asp Pro Tyr Asn Asp Val Ala Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 112
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 112
Ala Ala Lys Thr Leu Ala Glu
1 5

<210> 113
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 113
Tyr Ala Lys Thr Leu Ala Glu
1 5

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

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 114

Trp Ala Lys Thr Leu Ala Glu
1 5

<210> 115

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 115

Ser Ala Lys Thr Leu Ala Glu
1 5

<210> 116

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 116

Thr Ala Lys Thr Leu Ala Glu
1 5

<210> 117

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 117

Ile Ala Lys Thr Leu Ala Glu
1 5

<210> 118

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 118

Val Ala Lys Thr Leu Ala Glu
1 5

<210> 119

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 119

Asn Asn Lys Thr Leu Ala Glu
1 5

<210> 120

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 120

Asn Ile Lys Thr Leu Ala Glu
1 5

<210> 121

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 121

Asn Leu Leu Thr Leu Ala Glu
1 5

<210> 122
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 122
Asn Thr Lys Thr Leu Ala Glu
1 5

<210> 123
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 123
Asn Val Lys Thr Leu Ala Glu
1 5

<210> 124
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 124
Glu Val Gln Leu Val Gln 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 Thr Phe Ser Ser Tyr
20 25 30

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

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

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

Thr Thr Val Thr Val Ser Ser
115

<210> 125

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 125

Glu Val Gln Leu Val Gln 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 Thr Phe Ser Ser Tyr
20 25 30

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

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

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

Thr Thr Val Thr Val Ser Ser
115

<210> 126

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 126

Glu Val Gln Leu Val Gln 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 Thr Phe Ser Ser Tyr
20 25 30

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

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

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

Thr Thr Val Thr Val Ser Ser
115

<210> 127

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 127

Glu Val Gln Leu Val Gln 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 Thr Phe Ser Ser Tyr
20 25 30

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

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

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

Thr Thr Val Thr Val Ser Ser
115

<210> 128

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 128

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

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

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

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

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

Thr Thr Val Thr Val Ser Ser
115

<210> 129

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 129

Glu Val Gln Leu Val Gln 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 Thr Phe Ser Ser Tyr
20 25 30

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

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

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

65		70		75		80
Met	Glu	Leu	Ser	Arg	Leu	Arg
				85		
			Ser	Asp	Asp	Thr
				90		
			Val	Val	Tyr	Tyr
					95	Cys
Ala	Arg	Gly	Gly	Pro	Tyr	Gly
		100				
			Trp	Tyr	Phe	Asp
				105		
			Val	Trp	Gly	Gln
					110	Gly
Thr	Thr	Val	Thr	Val	Ser	Ser
		115				
<210> 130						
<211> 107						
<212> PRT						
<213> Artificial Sequence						
<220>						
<223> Description of Artificial Sequence: Synthetic						
Humanized antibody chain polypeptide						
<400> 130						
Asp	Ile	Gln	Met	Thr	Gln	Ser
				5		
			Pro	Ser	Ser	Leu
				10		
			Ser	Ala	Ser	Val
					15	Gly
1						
Asp	Arg	Val	Thr	Ile	Thr	Cys
		20				
			Arg	Ala	Ser	Glu
				25		
			His	Ile	Tyr	Ser
					30	Tyr
Leu	Ser	Trp	Tyr	Gln	Gln	Lys
		35				
			Pro	Gly	Lys	Ala
				40		
			Pro	Lys	Leu	Leu
				45		Ile
Tyr	Asn	Ala	Lys	Thr	Leu	Ala
	50					
			55			
			Glu	Gly	Val	Pro
					60	
			Ser	Arg	Phe	Ser
						Gly
Ser	Gly	Ser	Gly	Thr	Asp	Phe
				70		
			Thr	Leu	Thr	Ile
					75	
			Ser	Ser	Leu	Gln
					80	Pro
65						
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr
				85		
			Cys	Gln	His	His
				90		
			Phe	Gly	Ser	Pro
					95	Leu
Thr	Phe	Gly	Gln	Gly	Thr	Arg
		100				
			Leu	Glu	Ile	Lys
				105		

<210> 131
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 131
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 Ala Ser Glu His Ile Tyr Ser Tyr
20 25 30

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

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

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

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

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 132
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Humanized antibody chain polypeptide

<400> 132
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 Ala Ser Glu His Ile Tyr Ser Tyr

20

25

30

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

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

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

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

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
 100 105

<210> 133

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 Humanized antibody chain polypeptide

<400> 133

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 Ala Ser Glu His Ile Tyr Ser Tyr
 20 25 30

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

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

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

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

Thr	Phe	Gly	Gln	Gly	Thr	Arg	Leu	Glu	Ile	Lys
			100					105		

<210> 134
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 134															
Tyr	Ile	Asp	Pro	Tyr	Asn	Asp	Gly	Ala	Lys	Tyr	Ala	Gln	Lys	Phe	Gln
1				5					10					15	

Gly

<210> 135
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

<400> 135															
Tyr	Ile	Asp	Pro	Tyr	Asn	Asp	Gly	Ala	Lys	Tyr	Ser	Gln	Lys	Phe	Gln
1				5					10					15	

Gly

<210> 136
 <211> 116
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 VH sequence polypeptide

<400> 136

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

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

Thr Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

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

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

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

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

Thr Val Ser Ser
115

<210> 137

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
VL sequence polypeptide

<400> 137

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

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

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

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

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

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

Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105

<210> 138

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
VH sequence polypeptide

<400> 138

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

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

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

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

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

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

Ala Arg His Thr Gly Thr Leu Asp Trp Leu Val Tyr Trp Gly Gln Gly

100

105

110

Thr Leu Val Ile Val Ser Ser
115

<210> 139

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
VL sequence polypeptide

<400> 139

Asn Ile Val Met Ala Gln Ser Pro Lys Ser Met Ser Ile Ser Ala Gly
1 5 10 15

Asp Arg Val Thr Met Asn Cys Lys Ala Ser Gln Asn Val Asp Asn Asn
20 25 30

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

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

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

Glu Asp Ala Ala Phe Tyr Tyr Cys Gln Arg Ile Tyr Asn Phe Pro Thr
85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 140

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
CDR peptide

<220>
<221> MOD_RES
<222> (13)..(13)
<223> Trp, Phe, Tyr, Ile, Val or Leu

<400> 140
Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Xaa Glu Gly Tyr
1 5 10 15

Phe Asp Phe

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

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<220>
<221> MOD_RES
<222> (3)..(3)
<223> Asn, Ser, Thr, Gly or Asp

<220>
<221> MOD_RES
<222> (4)..(4)
<223> Ser, Asn, Ser, Thr, Tyr or Gln

<400> 141
Tyr Ala Xaa Xaa Leu Gln Thr
1 5

<210> 142
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<220>
<221> MOD_RES

<222> (7)..(7)
<223> Trp, Phe, Tyr, Ile, Val or Leu

<400> 142
Gln Gln Tyr Tyr Ser Gly Xaa Thr
1 5

<210> 143
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus polypeptide

<220>
<221> MOD_RES
<222> (6)..(6)
<223> Glu or Gln

<220>
<221> MOD_RES
<222> (9)..(9)
<223> Pro or Ala

<220>
<221> MOD_RES
<222> (12)..(12)
<223> Val or Leu

<220>
<221> MOD_RES
<222> (15)..(15)
<223> Ser or Pro

<220>
<221> MOD_RES
<222> (16)..(16)
<223> Gln, Glu or Gly

<220>
<221> MOD_RES
<222> (17)..(17)
<223> Ser or Thr

<220>
<221> MOD_RES
<222> (23)..(23)
<223> Ser, Thr or Ala

<220>
<221> MOD_RES
<222> (25)..(25)
<223> Thr or Ser

<220>
<221> MOD_RES
<222> (27)..(27)
<223> Ile or Val

<220>
<221> MOD_RES
<222> (30)..(30)
<223> Lys or Gln

<220>
<221> MOD_RES
<222> (37)..(37)
<223> Pro or Phe

<220>
<221> MOD_RES
<222> (39)..(39)
<223> Asn or Lys

<220>
<221> MOD_RES
<222> (40)..(40)
<223> Lys or Gly

<220>
<221> MOD_RES
<222> (43)..(43)
<223> Met or Leu

<220>
<221> MOD_RES
<222> (44)..(44)
<223> Met or Ile

<220>
<221> MOD_RES
<222> (45)..(45)
<223> Ile or Val

<220>
<221> MOD_RES
<222> (48)..(48)
<223> Ser or Thr

<220>
<221> MOD_RES
<222> (67)..(67)

<223> Thr or Ser

<220>

<221> MOD_RES

<222> (68)..(68)

<223> Arg or Val

<220>

<221> MOD_RES

<222> (70)..(70)

<223> Phe or Ser

<220>

<221> MOD_RES

<222> (71)..(71)

<223> Gln or Lys

<220>

<221> MOD_RES

<222> (79)..(79)

<223> His or Ser

<220>

<221> MOD_RES

<222> (81)..(81)

<223> Thr or Ala

<220>

<221> MOD_RES

<222> (83)..(83)

<223> Asp or Ala

<220>

<221> MOD_RES

<222> (87)..(87)

<223> Thr or Val

<220>

<221> MOD_RES

<222> (88)..(88)

<223> Ser or Tyr

<220>

<221> MOD_RES

<222> (92)..(92)

<223> Trp, Phe, Tyr, Ile or Val

<220>

<221> MOD_RES

<222> (94)..(94)

<223> Met, Val, Leu, Ala, Arg, Asn, Pro, Gln, Glu, Gly, Ile
His, Lys, Phe, Ser, Thr, Trp or Tyr

<220>
 <221> MOD_RES
 <222> (110)..(110)
 <223> Val, Thr or Leu

<220>
 <221> MOD_RES
 <222> (119)..(119)
 <223> Ser, Gly or Tyr

<220>
 <221> MOD_RES
 <222> (122)..(122)
 <223> Ala or Ser

<220>
 <221> MOD_RES
 <222> (123)..(123)
 <223> Pro or Gln

<400> 143
 Glu Val Gln Leu Gln Xaa Ser Gly Xaa Gly Leu Xaa Lys Pro Xaa Xaa
 1 5 10 15

Xaa Leu Ser Leu Thr Cys Xaa Val Xaa Gly Xaa Ser Ile Xaa Ser Asp
 20 25 30

Tyr Trp Gly Trp Xaa Arg Xaa Xaa Pro Gly Xaa Xaa Xaa Glu Trp Xaa
 35 40 45

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

Ser Arg Xaa Xaa Ile Xaa Xaa Asp Thr Ser Lys Asn Gln Phe Xaa Leu
 65 70 75 80

Xaa Leu Xaa Ser Val Thr Xaa Xaa Asp Thr Ala Xaa Tyr Xaa Cys Ala
 85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Xaa Glu Gly
 100 105 110

Tyr Phe Asp Phe Trp Gly Xaa Gly Thr Xaa Xaa Thr Val Ser Ser
 115 120 125

<210> 144
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus polypeptide

<220>
<221> MOD_RES
<222> (6)..(6)
<223> Glu or Gln

<220>
<221> MOD_RES
<222> (9)..(9)
<223> Pro or Ala

<220>
<221> MOD_RES
<222> (12)..(12)
<223> Val or Leu

<220>
<221> MOD_RES
<222> (15)..(15)
<223> Ser or Pro

<220>
<221> MOD_RES
<222> (16)..(16)
<223> Glu or Gly

<220>
<221> MOD_RES
<222> (23)..(23)
<223> Thr, Ala or Ser

<220>
<221> MOD_RES
<222> (25)..(25)
<223> Ser or Thr

<220>
<221> MOD_RES
<222> (27)..(27)
<223> Gly, Ser or Tyr

<220>
<221> MOD_RES
<222> (30)..(30)

<223> Ser or Ala

<220>

<221> MOD_RES

<222> (37)..(37)

<223> Ile or Val

<220>

<221> MOD_RES

<222> (39)..(39)

<223> Gln or Lys

<220>

<221> MOD_RES

<222> (40)..(40)

<223> Pro or Phe

<220>

<221> MOD_RES

<222> (44)..(44)

<223> Gly or Lys

<220>

<221> MOD_RES

<222> (45)..(45)

<223> Leu or Met

<220>

<221> MOD_RES

<222> (48)..(48)

<223> Ile or Met

<220>

<221> MOD_RES

<222> (67)..(67)

<223> Val or Ile

<220>

<221> MOD_RES

<222> (71)..(71)

<223> Val or Arg

<220>

<221> MOD_RES

<222> (83)..(83)

<223> Ser or His

<220>

<221> MOD_RES

<222> (88)..(88)

<223> Ala or Asp

<220>

<221> MOD_RES
 <222> (110)..(110)
 <223> Trp, Phe, Tyr, Ile, Val or Leu

<220>
 <221> MOD_RES
 <222> (122)..(122)
 <223> Met, Val, Leu, Ala, Arg, Asn, Pro, Gln, Glu, Gly, Ile, His,
 Lys, Phe, Ser, Thr, Trp or Tyr

<220>
 <221> MOD_RES
 <222> (123)..(123)
 <223> Val, Thr or Leu

<400> 144
 Glu Val Gln Leu Gln Xaa Ser Gly Xaa Gly Leu Xaa Lys Pro Xaa Xaa
 1 5 10 15

Thr Leu Ser Leu Thr Cys Xaa Val Xaa Gly Xaa Ser Ile Xaa Ser Asp
 20 25 30

Tyr Trp Gly Trp Xaa Arg Xaa Xaa Pro Gly Lys Xaa Xaa Glu Trp Xaa
 35 40 45

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

Ser Arg Xaa Thr Ile Ser Xaa Asp Thr Ser Lys Asn Gln Phe Ser Leu
 65 70 75 80

Lys Leu Xaa Ser Val Thr Ala Xaa Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Met Pro Ser Phe Ile Thr Leu Ala Ser Leu Ser Thr Xaa Glu Gly
 100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Thr Xaa Xaa Thr Val Ser Ser
 115 120 125

<210> 145
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus polypeptide

<220>
<221> MOD_RES
<222> (10)..(10)
<223> Leu or Ser

<220>
<221> MOD_RES
<222> (21)..(21)
<223> Leu or Ile

<220>
<221> MOD_RES
<222> (22)..(22)
<223> Asn or Thr

<220>
<221> MOD_RES
<222> (40)..(40)
<223> Leu or Pro

<220>
<221> MOD_RES
<222> (42)..(42)
<223> Glu or Lys

<220>
<221> MOD_RES
<222> (43)..(43)
<223> Phe or Leu

<220>
<221> MOD_RES
<222> (46)..(46)
<223> Asn, Ser, Thr, Gly or Asp

<220>
<221> MOD_RES
<222> (52)..(52)
<223> Ser, Asn, Thr, Tyr or Gln

<220>
<221> MOD_RES
<222> (53)..(53)
<223> Ile or Val

<220>
<221> MOD_RES
<222> (58)..(58)

<223> Gly or Ser

<220>

<221> MOD_RES

<222> (77)..(77)

<223> Val or Phe

<220>

<221> MOD_RES

<222> (83)..(83)

<223> Phe or Tyr

<220>

<221> MOD_RES

<222> (87)..(87)

<223> Trp, Phe, Tyr, Ile, Val or Leu

<220>

<221> MOD_RES

<222> (95)..(95)

<223> Leu or Ile

<220>

<221> MOD_RES

<222> (105)..(105)

<223> Ala or Val

<400> 145

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

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

Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Xaa	Gly	Xaa	Xaa	Pro	Lys	Xaa	Leu	Ile
		35					40					45			

Tyr	Tyr	Ala	Xaa	Xaa	Leu	Gln	Thr	Gly	Xaa	Pro	Ser	Arg	Phe	Ser	Gly
	50					55					60				

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

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

Phe Gly Gly Gly Thr Lys Val Glu Xaa Lys

<210> 146
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 consensus polypeptide

<220>
 <221> MOD_RES
 <222> (43)..(43)
 <223> Leu or Phe

<220>
 <221> MOD_RES
 <222> (46)..(46)
 <223> Asn, Ser, Thr, Gly or Asp

<220>
 <221> MOD_RES
 <222> (52)..(52)
 <223> Ser, Asn, Thr, Tyr or Gln

<220>
 <221> MOD_RES
 <222> (53)..(53)
 <223> Val or Ile

<220>
 <221> MOD_RES
 <222> (58)..(58)
 <223> Trp, Phe, Tyr, Ile, Val or Leu

<220>
 <221> MOD_RES
 <222> (83)..(83)
 <223> Ala or Val

<220>
 <221> MOD_RES
 <222> (95)..(95)
 <223> Phe or Val

<400> 146
 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 Lys Ala Ser Gln Ser Ile His Lys Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Xaa Pro Lys Xaa Leu Ile
35 40 45

Tyr Tyr Ala Xaa Xaa Leu Gln Thr Gly Xaa Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 147

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
consensus peptide

<220>

<221> MOD_RES

<222> (7)..(7)

<223> Asp, Arg, Leu, Lys, Phe, Ser, Tyr or Val

<220>

<221> MOD_RES

<222> (8)..(8)

<223> Gly, Arg, Asn, Gln, Glu, Leu, Lys, Ser, Tyr or Val

<220>

<221> MOD_RES

<222> (12)..(12)

<223> Asn, Ala or Ser

<220>

<221> MOD_RES

<222> (13)..(13)

<223> Glu or Gln

<220>
<221> MOD_RES
<222> (16)..(16)
<223> Lys or Gln

<400> 147
Tyr Ile Asp Pro Tyr Asn Xaa Xaa Ala Lys Tyr Xaa Xaa Lys Phe Xaa
1 5 10 15

Gly

<210> 148
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus peptide

<220>
<221> MOD_RES
<222> (1)..(1)
<223> Asn, Ala, Val, Trp, Ser, Thr, Arg, His, Gly,
Ile or Val

<220>
<221> MOD_RES
<222> (2)..(2)
<223> Ala, Asn, Ile, Leu, Thr or Val

<400> 148
Xaa Xaa Lys Thr Leu Ala Glu
1 5

<210> 149
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus polypeptide

<220>
<221> MOD_RES

<222> (5)..(5)
<223> Gln or Val

<220>
<221> MOD_RES
<222> (9)..(9)
<223> Pro or Ala

<220>
<221> MOD_RES
<222> (11)..(11)
<223> Val or Leu

<220>
<221> MOD_RES
<222> (12)..(12)
<223> Val or Lys

<220>
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<222> (16)..(16)
<223> Ser or Ala

<220>
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<222> (20)..(20)
<223> Met or Val

<220>
<221> MOD_RES
<222> (38)..(38)
<223> Lys or Arg

<220>
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<222> (40)..(40)
<223> Lys or Ala

<220>
<221> MOD_RES
<222> (44)..(44)
<223> Gly or Arg

<220>
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<222> (56)..(56)
<223> Asp, Arg, Leu, Lys, Phe, Ser, Tyr or Val

<220>
<221> MOD_RES
<222> (57)..(57)
<223> Gly, Arg, Asn, Gln, Glu, Leu, Lys, Ser, Tyr or Val

<220>
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 <222> (61)..(61)
 <223> Asn, Ala or Ser

<220>
 <221> MOD_RES
 <222> (62)..(62)
 <223> Glu or Gln

<220>
 <221> MOD_RES
 <222> (65)..(65)
 <223> Lys or Gln

<220>
 <221> MOD_RES
 <222> (67)..(67)
 <223> Arg or Lys

<220>
 <221> MOD_RES
 <222> (68)..(68)
 <223> Ala or Val

<220>
 <221> MOD_RES
 <222> (72)..(72)
 <223> Ser or Arg

<220>
 <221> MOD_RES
 <222> (74)..(74)
 <223> Lys or Thr

<220>
 <221> MOD_RES
 <222> (76)..(76)
 <223> Ser, Ile, Ala or Thr

<220>
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 <222> (79)..(79)
 <223> Ala or Val

<220>
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 <222> (85)..(85)
 <223> Arg or Ser

<220>
 <221> MOD_RES
 <222> (87)..(87)

<223> Thr or Arg

<220>

<221> MOD_RES

<222> (89)..(89)

<223> Asp or Glu

<220>

<221> MOD_RES

<222> (91)..(91)

<223> Ser or Thr

<220>

<221> MOD_RES

<222> (92)..(92)

<223> Ala or Val

<220>

<221> MOD_RES

<222> (104)..(104)

<223> Trp, Ala, Asp, Gly, Phe, Gly, Ile, Lys, Asn, Gln, Arg, Ser, Thr
Val or Tyr

<220>

<221> MOD_RES

<222> (111)..(111)

<223> Ala or Gln

<400> 149

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

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

Val	Met	His	Trp	Val	Xaa	Gln	Xaa	Pro	Gly	Gln	Xaa	Leu	Glu	Trp	Ile
		35				40						45			

Gly	Tyr	Ile	Asp	Pro	Tyr	Asn	Xaa	Xaa	Ala	Lys	Tyr	Xaa	Xaa	Lys	Phe
	50					55					60				

Xaa	Gly	Xaa	Xaa	Thr	Leu	Thr	Xaa	Asp	Xaa	Ser	Xaa	Ser	Thr	Xaa	Tyr
65					70					75					80

Met	Glu	Leu	Ser	Xaa	Leu	Xaa	Ser	Xaa	Asp	Xaa	Xaa	Val	Tyr	Tyr	Cys
				85					90					95	

Ala	Arg	Gly	Gly	Pro	Tyr	Gly	Xaa	Tyr	Phe	Asp	Val	Trp	Gly	Xaa	Gly
			100					105						110	

Thr	Thr	Val	Thr	Val	Ser	Ser
						115

<210> 150
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 consensus polypeptide

<220>
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 <222> (16)..(16)
 <223> Ala or Ser

<220>
 <221> MOD_RES
 <222> (44)..(44)
 <223> Arg or Gly

<220>
 <221> MOD_RES
 <222> (56)..(56)
 <223> Asp, Arg, Leu, Lys, Phe, Ser, Tyr or Val

<220>
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 <222> (57)..(57)
 <223> Gly, Arg, Asn, Gln, Glu, Leu, Lys, Ser, Tyr or Val

<220>
 <221> MOD_RES
 <222> (61)..(61)
 <223> Asn, Ala or Ser

<220>
 <221> MOD_RES
 <222> (62)..(62)
 <223> Glu or Gln

<220>
 <221> MOD_RES
 <222> (65)..(65)
 <223> Lys or Gln

<220>
 <221> MOD_RES
 <222> (72)..(72)
 <223> Arg or Ser

<220>
 <221> MOD_RES
 <222> (74)..(74)
 <223> Thr or Lys

<220>
 <221> MOD_RES
 <222> (76)..(76)
 <223> Ala, Thr or Ile

<220>
 <221> MOD_RES
 <222> (79)..(79)
 <223> Arg or Val

<220>
 <221> MOD_RES
 <222> (85)..(85)
 <223> Ser or Arg

<220>
 <221> MOD_RES
 <222> (89)..(89)
 <223> Glu or Asp

<220>
 <221> MOD_RES
 <222> (92)..(92)
 <223> Ala or Val

<220>
 <221> MOD_RES
 <222> (104)..(104)
 <223> Trp, Ala, Asp, Gly, Phe, Gly, Ile, Lys, Asn, Ser,
 Thr, Val or Tyr

<400> 150
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Xaa
 1 5 10 15

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

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

Gly Tyr Ile Asp Pro Tyr Asn Xaa Xaa Ala Lys Tyr Xaa Xaa Lys Phe
50 55 60

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

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

Ala Arg Gly Gly Pro Tyr Gly Xaa Tyr Phe Asp Val Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 151
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus polypeptide

<220>
<221> MOD_RES
<222> (9)..(9)
<223> Ala or Ser

<220>
<221> MOD_RES
<222> (17)..(17)
<223> Glu or Asp

<220>
<221> MOD_RES
<222> (18)..(18)
<223> Thr or Arg

<220>
<221> MOD_RES
<222> (40)..(40)
<223> Gln or Pro

<220>
<221> MOD_RES

<222> (43)..(43)
<223> Ser, Ala or Val

<220>
<221> MOD_RES
<222> (45)..(45)
<223> Gln or Lys

<220>
<221> MOD_RES
<222> (48)..(48)
<223> Val or Ile

<220>
<221> MOD_RES
<222> (50)..(50)
<223> Asn, Ala, Tyr, Trp, Ser, Thr, Ile or Val

<220>
<221> MOD_RES
<222> (51)..(51)
<223> Ala, Asn, Ile, Leu, Thr or Val

<220>
<221> MOD_RES
<222> (70)..(70)
<223> Gln or Asp

<220>
<221> MOD_RES
<222> (72)..(72)
<223> Ser or Thr

<220>
<221> MOD_RES
<222> (74)..(74)
<223> Lys or Thr

<220>
<221> MOD_RES
<222> (76)..(76)
<223> Asn or Ser

<220>
<221> MOD_RES
<222> (83)..(83)
<223> Phe or Val

<220>
<221> MOD_RES
<222> (84)..(84)
<223> Gly or Ala

<220>
 <221> MOD_RES
 <222> (100)..(100)
 <223> Ala or Gln

<220>
 <221> MOD_RES
 <222> (103)..(103)
 <223> Thr or Arg

<220>
 <221> MOD_RES
 <222> (106)..(106)
 <223> Leu or Ile

<400> 151
 Asp Ile Gln Met Thr Gln Ser Pro Xaa Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Xaa Xaa Val Thr Ile Thr Cys Arg Ala Ser Glu His Ile Tyr Ser Tyr
 20 25 30

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

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

Ser Gly Ser Gly Thr Xaa Phe Xaa Leu Xaa Ile Xaa Ser Leu Gln Pro
 65 70 75 80

Glu Asp Xaa Xaa Thr Tyr Tyr Cys Gln His His Phe Gly Ser Pro Leu
 85 90 95

Thr Phe Gly Xaa Gly Thr Xaa Leu Glu Xaa Lys
 100 105

<210> 152
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 consensus polypeptide

<220>
 <221> MOD_RES
 <222> (43)..(43)
 <223> Ala or Val

<220>
 <221> MOD_RES
 <222> (50)..(50)
 <223> Asn, Ala, Tyr, Trp, Ser, Thr, Ile or Val

<220>
 <221> MOD_RES
 <222> (51)..(51)
 <223> Ala, Asn, Ile, Leu, Thr or Val

<220>
 <221> MOD_RES
 <222> (70)..(70)
 <223> Asp or Gln

<220>
 <221> MOD_RES
 <222> (83)..(83)
 <223> Phe or Val

<400> 152
 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 Ala Ser Glu His Ile Tyr Ser Tyr
 20 25 30

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

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

Ser Gly Ser Gly Thr Xaa Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

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

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
 100 105

<210> 153
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<220>
<221> MOD_RES
<222> (6)..(6)
<223> Trp, Ala, Asp, Glu, Phe, Gly, Ile, Lys, Asn, Gln,
Arg, Ser, Thr, Val or Tyr

<400> 153
Gly Gly Pro Tyr Gly Xaa Tyr Phe Asp Val
1 5 10

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

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 154
Gly Gly Pro Tyr Gly Ala Tyr Phe Asp Val
1 5 10

<210> 155
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 155
Gly Gly Pro Tyr Gly Asp Tyr Phe Asp Val
1 5 10

<210> 156
<211> 10

<212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

 <400> 156
 Gly Gly Pro Tyr Gly Glu Tyr Phe Asp Val
 1 5 10

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

 <220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

 <400> 157
 Gly Gly Pro Tyr Gly Phe Tyr Phe Asp Val
 1 5 10

 <210> 158
 <211> 10
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

 <400> 158
 Gly Gly Pro Tyr Gly Gly Tyr Phe Asp Val
 1 5 10

 <210> 159
 <211> 10
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 CDR peptide

 <400> 159
 Gly Gly Pro Tyr Gly Ile Tyr Phe Asp Val
 1 5 10

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

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 160
Gly Gly Pro Tyr Gly Lys Tyr Phe Asp Val
1 5 10

<210> 161
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 161
Gly Gly Pro Tyr Gly Asn Tyr Phe Asp Val
1 5 10

<210> 162
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 162
Gly Gly Pro Tyr Gly Gln Tyr Phe Asp Val
1 5 10

<210> 163
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 163

Gly Gly Pro Tyr Gly Arg Tyr Phe Asp Val
1 5 10

<210> 164
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 164
Gly Gly Pro Tyr Gly Ser Tyr Phe Asp Val
1 5 10

<210> 165
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 165
Gly Gly Pro Tyr Gly Thr Tyr Phe Asp Val
1 5 10

<210> 166
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
CDR peptide

<400> 166
Gly Gly Pro Tyr Gly Val Tyr Phe Asp Val
1 5 10

<210> 167
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

CDR peptide

<400> 167

Gly	Gly	Pro	Tyr	Gly	Tyr	Tyr	Phe	Asp	Val
1				5					10