

SEQUENCE LISTING

<110> CEPHALON, INC.

<120> ANTI-CXCR2 ANTIBODIES AND USES THEREOF

<130> 102085.005304

<140>

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<150> 62/713,095

<151> 2018-08-01

<160> 256

<170> PatentIn version 3.5

<210> 1

<211> 122

<212> PRT

<213> Artificial Sequence

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<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

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<400> 1

Gln Leu 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 Arg Thr Ser
20 25 30

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

Tyr Ile Gly Ser Ile Tyr Tyr Ser Gly Thr Thr Tyr Tyr Asn Pro Ser
50 55 60

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

65					70					75					80
Ser	Leu	Lys	Met	Ser	Ser	Val	Thr	Ala	Ala	Asp	Ser	Ala	Val	Tyr	Tyr
			85						90					95	
Cys	Ala	Arg	His	Gly	Arg	Val	Arg	Glu	Val	Pro	Pro	Phe	Asp	Tyr	Trp
			100					105					110		
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser						
		115					120								
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Ser	Ser	Glu	Leu	Thr	Gln	Asp	Pro	Ala	Val	Ser	Val	Ala	Leu	Gly	Gln
1			5						10					15	
Thr	Val	Arg	Ile	Thr	Cys	Gln	Gly	Asp	Ser	Leu	Arg	Tyr	Tyr	Tyr	Ala
			20					25					30		
Ser	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Val	Leu	Val	Ile	Tyr
		35					40					45			
Asp	Glu	Asn	Ser	Arg	Pro	Ser	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser
	50					55					60				
Ser	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Ser	Ile	Thr	Gly	Thr	Gln	Ala	Glu
65					70					75					80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Thr Ser Gly Asn His
85 90 95

Trp Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 3

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

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<400> 3

Gln Leu 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 Arg Thr Ser
20 25 30

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

Tyr Ile Gly Ser Ile Tyr Tyr Ser Gly Thr Thr Tyr Tyr Asn Pro Ser
50 55 60

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

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

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

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

<210> 4
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<213> Artificial Sequence

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<400> 4
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
1 5 10 15

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

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

Asp Glu Asn Ser Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Arg Ile Thr Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Thr Ser Gly Asn His
85 90 95

Trp Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 5
<211> 113

<212> PRT
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<400> 5
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 6
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<213> Artificial Sequence

<220>
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<400> 6
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 7
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<223> /note="BKO_1H3_VH"

<400> 7

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

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

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

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

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

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

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

Ser

<210> 8

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<212> PRT

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polypeptide"

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<223> /note="BKO_1H3_VL"

<400> 8

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

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

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

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

Ser Thr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 9

<211> 113

<212> PRT

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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

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<223> /note="BKO_2D8_VH"

<400> 9

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

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

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

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

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

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

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

Ser

<210> 10
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<400> 10
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

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

Val Ile Tyr Glu Val Asn Met Arg Pro Ser Gly Val Pro Ala Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asp Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Ser Val Leu
100 105 110

<210> 11

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polypeptide"

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<223> /note="BK0_3A9_VH"

<400> 11

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

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

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

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

Val Ser Leu Lys Arg Arg Ile Thr Ile Arg Pro Asp Thr Ser Arg Asn

65		70		75		80
His	Phe	Ser	Leu	His	Leu	Ser
			85			
				Ser	Ser	Val
					90	
				Thr	Pro	Glu
						Asp
				Thr	Ala	Val
					95	
Tyr	Tyr	Cys	Val	Arg	Ala	Tyr
			100			
				Cys	Gly	Gly
					105	
				Ser	Cys	Leu
						110
				Asp	Tyr	
Trp	Gly	Gln	Gly	Thr	Leu	Val
			115			
				Thr	Val	Ser
					120	Ser

<210> 12
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<400> 12
 Gln Ser Ala Leu Thr Gln Pro Ala Ser Ala Ser Gly Ser Pro Gly Gln
 1 5 10 15

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

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

Met Ile Tyr Glu Gly Ser Lys Arg Pro Ser Gly Ile Ser Asn Arg Phe
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
 65 70 75 80

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

Asn Thr Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 13

<211> 123

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<220>

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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

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<223> /note="BKO_3D6_VH"

<400> 13

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

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

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

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

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

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

Ala Lys Asp Met Lys Gly Ser Gly Thr Tyr Phe Pro Ala Phe Asp Tyr
100 105 110

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

<210> 14

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<400> 14

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

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

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

Gln Asp Ser Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65 70 75 80

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

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 15

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

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

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

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

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

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

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

Ser

<210> 16
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<400> 16
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

Ser Val Thr Met Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
20 25 30

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 17
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<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

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<223> /note="BKO_4A8_VH"

<400> 17

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 18

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<223> /note="Description of Artificial Sequence: Synthetic
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<223> /note="BKO_4A8_VL"

<400> 18

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 19
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<223> /note="Description of Artificial Sequence: Synthetic
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<400> 19
Gln 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 Thr Gly Tyr
20 25 30

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

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

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

<210> 20

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<220>

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<223> /note="Description of Artificial Sequence: Synthetic
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<223> /note="BKO_4F10_VL"

<400> 20

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

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

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

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

Ser Thr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 21

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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

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<223> /note="BK0_5E8_H5_C05_VH"

<400> 21

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

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

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

Ser Ala Ile Arg Gly Ser Gly Ala Gly Thr Tyr Tyr Ala Asp Ser Met
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asp Thr Leu Tyr

65					70					75					80	
Leu	Leu	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
			85						90					95		
Ser	Lys	Leu	Glu	Ala	Val	Ser	Gly	Thr	Gly	Lys	Tyr	Phe	Gln	His	Trp	
			100					105					110			
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser							
		115					120									
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Ser	Tyr	Glu	Leu	Thr	Gln	Pro	Pro	Ser	Val	Ser	Val	Ser	Pro	Gly	Gln	
1				5					10					15		
Thr	Ala	Asn	Ile	Thr	Cys	Ser	Gly	Asp	Thr	Leu	Gly	Asp	Lys	Phe	Ala	
			20					25					30			
Cys	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Val	Leu	Val	Ile	Tyr	
		35					40					45				
Gln	Asp	Thr	Lys	Arg	Pro	Ser	Gly	Ile	Pro	Glu	Arg	Phe	Ser	Gly	Ser	
	50					55					60					
Lys	Ser	Gly	Ile	Thr	Ala	Thr	Leu	Thr	Ile	Ser	Gly	Thr	Gln	Ala	Met	
65					70					75					80	

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

Phe Gly Gly Gly Thr Arg Leu Thr Val Leu
100 105

<210> 23
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polypeptide"

<220>
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<400> 23
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

<210> 24
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<400> 24
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

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

Met Ile Phe Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 25
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<400> 25
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Thr Lys Pro Gly Ala
1 5 10 15

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

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

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

<210> 26
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<223> /note="BK0_5G6_L12_E12_VL"

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

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

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

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

Ser Thr Trp Val Phe Gly Gly Gly Thr Thr Leu Thr Val Leu
100 105 110

<210> 27

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

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<223> /note="BK0_6A1_H4_A04_VH"

<400> 27

Gln Val Gln Leu Lys Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu

1	5	10	15
Thr	Leu	Ser	Leu
	20		
Thr	Cys	Ala	Val
			25
Tyr	Gly	Gly	Ser
			30
Phe	Ser	Gly	Tyr
Tyr	Trp	Thr	Trp
	35		
Ile	Arg	Gln	Pro
			40
Pro	Gly	Lys	Gly
			45
Leu	Glu	Trp	Ile
Gly	Glu	Ile	Asn
			50
His	Ser	Gly	Ser
			55
Thr	Asn	Tyr	Asn
			60
Pro	Ser	Leu	Lys
Ser	Arg	Val	Thr
			65
Met	Ser	Val	Asp
			70
Thr	Ser	Lys	Asn
			75
Gln	Phe	Ser	Leu
			80
Lys	Leu	Arg	Ser
			85
Val	Thr	Ala	Ala
			90
Asp	Thr	Ala	Val
			95
Tyr	Tyr	Cys	Ala
Arg	Gly	Glu	Val
			100
Arg	Gly	Leu	Ile
			105
Thr	Leu	Tyr	Trp
			110
Tyr	Phe	Asp	Val
Trp	Gly	Arg	Gly
			115
Ser	Leu	Val	Thr
			120
Val	Ser	Ser	

<210> 28
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
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 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
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 <223> /note="BK0_6A1_E10_VL"

<400> 28
 Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1 5 10 15

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

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

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asn His
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 29

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0_6A2_H1_B01_VH"

<400> 29

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

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

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

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

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

Ala Arg Asp Glu Gly Tyr Asn Tyr Gly Tyr Gly Gly Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

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

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
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<223> /note="BKO_6A2_L6_A06_VL"

<400> 30
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15

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

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

Gln Asp Ser Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65 70 75 80

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

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 31

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BKO_7C11_H6_B06_VH"

<400> 31

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

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

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

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

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

<210> 32

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="BK0_7C11_G01_VL"

<400> 32

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

Thr Val Arg Ile Thr Cys Gln Gly Asn Ser Leu Arg Phe Tyr Tyr Ala
20 25 30

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

Asp Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Tyr Tyr
85 90 95

Met Ile Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 33

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0_7G10_H1_B01_VH"

<400> 33

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

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

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

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

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

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

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

<210> 34

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="BK0_7G10_L6_E06_VL"

<400> 34

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

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

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

Met Ile Phe Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 35

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

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<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
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<223> /note="BKO_7H8_H3_C03_VH"

<400> 35
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 36
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
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<223> /note="BKO_7H8_L10_F10_VL"

<400> 36

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

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

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

Val Ile Tyr Glu Val Asn Met Arg Pro Ser Gly Val Pro Ala Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asp Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Ser Val Leu
100 105 110

<210> 37

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BKO_8B6_VH"

<400> 37

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

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

20

25

30

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

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

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

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

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

Ser

<210> 38

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<220>

<221> source

<223> /note="BKO_8B6_VL"

<400> 38

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

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

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

Met Met Tyr Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asp Asn Phe Gly Val Phe Gly Gly Gly Thr Arg Leu Thr Val Leu
100 105 110

<210> 39
<211> 122
<212> PRT
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<220>
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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BKO_8C4_VH"

<400> 39
Gln Leu 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 Arg Thr Ser
20 25 30

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

Tyr Ile Gly Ser Ile Tyr Tyr Ser Gly Thr Thr Tyr Tyr Asn Pro Ser
50 55 60

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

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

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

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

<210> 40

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0_8C4_VL"

<400> 40

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

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

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

Asp Glu Asn Ser Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Arg Ile Thr Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Thr Ser Gly Asn His
85 90 95

Trp Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 41
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BK0_8G3_H4_D04_VH"

<400> 41
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Arg Leu Gly Tyr Trp Gly Gln Gly Ser Leu Val Thr Val Ser

100

105

110

Ser

<210> 42

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="BKO_8G3_L1_G01_VL"

<400> 42

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

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

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 43
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="BKO_8H10_VH"

<400> 43
Gln 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 Thr Gly Tyr
20 25 30

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Thr Thr Ala Tyr
65 70 75 80

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

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

Thr Val Ser Ser
115

<210> 44
<211> 110
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="BKO_8H10_VL"

<400> 44

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

Ser Val Thr Ile Ser Phe Thr Gly Thr Ser Arg Asp Val Gly Asp Tyr
20 25 30

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

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

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

<210> 45

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
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<223> /note="BKO_8H8_H5_E05_VH"

<400> 45
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 46
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BKO_8H8_L7_H08_VL"

<400> 46

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

Ser Val Thr Met Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
20 25 30

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Ile Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 47

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BKO_9A8_H3_F03_VH"

<400> 47

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

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

20

25

30

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

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

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

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

Ala Ile Gln Leu Gly Ser Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 48

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BKO_9A8_L1_H02_VL"

<400> 48

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

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

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

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 49
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BKO_9C3_H8_G08_VH"

<400> 49
Glu Val Gln Val Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 50

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0_9C3_L1_F01_VL"

<400> 50

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

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

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

Met Ile Tyr Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 51
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BKO_10G10_VH"

<400> 51
Gln Leu 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 Arg Arg Ser
20 25 30

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

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

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

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

Cys Ala Arg Gly Tyr Ser Ser Gly Gly Phe Asp Pro Trp Gly Gln Gly

100

105

110

Thr Leu Val Thr Val Ser Ser
115

<210> 52

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BKO_10G10_VL"

<400> 52

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

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

Asn Tyr Val Ser Trp Cys Gln Gln His Pro Gly Lys Ala Pro Lys Ile
35 40 45

Met Ile Phe Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

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

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

<210> 53
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH S32Q"

<400> 53
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 54
<211> 113
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH S32H"

<400> 54

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 55

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
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<223> /note="4A8 VH S32L"

<400> 55
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 56
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH S32W"

<400> 56

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 57

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

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<223> /note="4A8 VH S32Y"

<400> 57

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 58

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH T33A"

<400> 58

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 59

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH M34Q"

<400> 59

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 60
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH M34D"

<400> 60
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 61
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
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<223> /note="4A8 VH M34H"

<400> 61
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

Thr His Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

35

40

45

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
 100 105 110

Ser

<210> 62

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH M34W"

<400> 62

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 63
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH I51H"

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 64

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH G52aD"

<400> 64

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 65
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH R53S"

<400> 65
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

85

90

95

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
 100 105 110

Ser

<210> 66

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH R53Q"

<400> 66

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 67
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH G54D"

<400> 67
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 68

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH N56S"

<400> 68

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 69
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH I94K"

<400> 69
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Lys Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 70

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH M96A"

<400> 70
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 71
<211> 113
<212> PRT
<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH M96Q"

<400> 71

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

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

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

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

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

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

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

Ser

<210> 72

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH M96K"

<400> 72

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

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

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

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

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

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

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

Ser

<210> 73

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH G101D"

<400> 73
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 74
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Y102S"

<400> 74

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

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

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

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

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

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

Ala Ile Gln Met Gly Ser Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 75

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH Y102K"

<400> 75

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

1	5	10	15
Ser	Leu	Arg	Leu
20	Ser	Cys	Ala
	25	Ala	Ser
		Gly	Phe
		Thr	Phe
		Ser	Ser
		Ser	
Thr	Met	Ser	Trp
35	Val	Arg	Gln
	40	Ala	Pro
		Gly	Lys
		Gly	Leu
		Glu	Trp
		Val	
Ser	Ala	Ile	Ser
50	Gly	Arg	Gly
	55	Arg	Asn
		Thr	Tyr
		Tyr	Ala
		Asp	Ser
		Val	
Lys	Gly	Arg	Phe
65	Thr	Ile	Ser
	70	Arg	Asp
		Asn	Ser
		Arg	Asn
		Thr	Leu
		Tyr	
		Tyr	Cys
			95
Leu	Gln	Met	Asn
	85	Ser	Leu
		Arg	Ala
		Glu	Asp
		Thr	Ala
		Val	Tyr
		Tyr	Cys
			95
Ala	Ile	Gln	Met
	100	Gly	Lys
		Trp	Gly
		Gln	Gly
		Ile	Leu
		Val	Thr
		Val	Ser
			110

Ser

<210> 76
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
 <221> source
 <223> /note="4A8 VL E50D"

<400> 76
 Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
 1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

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

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 77

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N52D"

<400> 77

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asp Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 78

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N52S"

<400> 78

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 79
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VL K53A"

<400> 79
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Ala Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu

100

105

110

<210> 80

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL K53D"

<400> 80

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
 35 40 45

Met Ile Tyr Glu Val Asn Asp Arg Pro Ser Gly Val Pro Asp Arg Phe
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
 85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
 100 105 110

<210> 81

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL K53H"

<400> 81

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn His Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 82

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

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<223> /note="4A8 VL R54Q"

<400> 82

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Gln Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 83

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

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<223> /note="4A8 VL Y91A"

<400> 83

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Ala Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 84

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N94A"

<400> 84

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 85

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N94S"

<400> 85

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu

65					70					75					80	
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ser	Ser	Tyr	Ala	Gly	Ser	
				85					90					95		
Asn	Asn	Phe	Gly	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu		
			100					105					110			
<210> 86																
<211> 111																
<212> PRT																
<213> Artificial Sequence																
<220>																
<221> source																
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"																
<220>																
<221> source																
<223> /note="4A8 VL N94K"																
<400> 86																
Gln	Ser	Ala	Leu	Thr	Gln	Pro	Pro	Ser	Ala	Ser	Gly	Ser	Pro	Gly	Gln	
1				5					10					15		
Ser	Val	Thr	Ile	Ser	Cys	Ile	Gly	Thr	Ser	Ser	Asp	Val	Gly	Gly	Tyr	
			20					25					30			
Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Asp	Lys	Ala	Pro	Lys	Leu	
		35					40					45				
Met	Ile	Tyr	Glu	Val	Asn	Lys	Arg	Pro	Ser	Gly	Val	Pro	Asp	Arg	Phe	
	50					55					60					
Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Thr	Val	Ser	Gly	Leu	
65					70					75					80	
Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ser	Ser	Tyr	Ala	Gly	Lys	
				85					90					95		

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 87

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N94L"

<400> 87

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Leu
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 88

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL N94W"

<400> 88

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 89

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL N94Y"

<400> 89

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 90

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N95aQ"

<400> 90

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Gln Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 91

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N95aD"

<400> 91

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu

35

40

45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
 85 90 95

Asn Asp Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
 100 105 110

<210> 92

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
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<220>

<221> source

<223> /note="4A8 VL N95aH"

<400> 92

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
 35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn His Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 93

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N95aK"

<400> 93

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Lys Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 94

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N95aL"

<400> 94

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Leu Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 95

<211> 111

<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VL N95aY"

<400> 95
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

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

<210> 96
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL V97A"

<400> 96

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 97

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL V97K"

<400> 97

Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln

1	5	10	15
Ser Val Thr Ile Ser Cys Ile Gly Thr Ser Ser Asp Val Gly Gly Tyr	20	25	30
Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu	35	40	45
Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe	50	55	60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu	65	70	75
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn	85	90	95
Asn Asn Phe Gly Lys Phe Gly Gly Gly Thr Lys Leu Thr Val Leu	100	105	110

<210> 98
 <211> 113
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
 <221> source
 <223> /note="4A8 VH Variant 1 (M34Q_N56S)"

<400> 98
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Ser	20	25	30
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Thr Gln Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 99
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 2 (M34Q_A40P_N56S)"

<400> 99
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 100
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 3 (M34Q_A40P_N56S_R75K)"

<400> 100
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 101

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH Variant 4 (M34Q_A40P_N56S_M96K)"

<400> 101

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

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Arg Asn Thr Leu Tyr

65 70 75 80

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

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

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<210> 102
<211> 113
<212> PRT
<213> Artificial Sequence
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<220>  
<221> source  
<223> /note="4A8 VH Variant 5 (M34Q A40P N56S R75K M96K)"
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Ser
20 25 30

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

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

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

Ser

<210> 103
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 6 (M34Q_A40P_N56S_R75K_I94K_M96K)"

<400> 103
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 104
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 7 (M34Q_A40P_N56S_I94K_M96K)"

<400> 104
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 105

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH Variant 8 (M34Q_N56S_M96K)"

<400> 105

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

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

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

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

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

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

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

Ser

<210> 106
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 9 (M34Q_N56S_R75K_M96K)"

<400> 106
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 107
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 10 I94K_M96K"

<400> 107
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Ser

<210> 108
<211> 113
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH Variant 101 M34Q_A40P_N56S_R75K_M96A"

<400> 108

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

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

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

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

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

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

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

Ser

<210> 109

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VL variant b N52S_N94S"

<400> 109
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 110
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VL variant c D41G_N52S_N94S"

<400> 110

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

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

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

Met Ile Tyr Glu Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 111

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<220>

<221> source

<223> /note="4A8 VH M34Q_A40P_N56S_R75K_M96A"

<400> 111

gaagttcagc tgcttgaatc tggcggagga ctggttcagc ctggcggatc tctgagactg 60

tcttgtgccg ccagcggcctt cacccttagc agcagcacac agagctgggt cgcacagcct 120

cctggcaaag gactggaatg ggtgtccgcc atctctggca gaggcagaag cacctactac 180

gccgactctg tgaagggcag attcaccatc agccgggaca acagcaagaa caccctgtac	240
ctgcagatga acagcctgag agccgaggac accgccgtgt actattgtgc catccaggcc	300
ggctattggg gccagggaat actcgtgaca gtgtcctca	339

<210> 112
 <211> 333
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
 <221> source
 <223> /note="4A8 VL D41G_N52S_N94S"

<400> 112	
cagtctgctc tgacacagcc tcctagcgcc tctggctctc ctggccagag cgtgaccatc	60
agctgtatcg gcaccagcag cgacgtgggc ggctacaact acgtgtcctg gtatcagcag	120
caccccggtg aggcccccaa gctgatgatc tacgaagtgt ccaagcggcc cagcggcgtg	180
cccgatagat tcagcggcag caagagcggc aacaccgcca gcctcacagt gtctggactg	240
caggccgagg acgaggccga ctactactgt agcagctacg ccggcagcaa caacttcggc	300
gtgttcggcg gaggcaccaa gctgacagtc cta	333

<210> 113
 <211> 436
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
 <221> source
 <223> /note="BK0-4A8-mIgG1 VH"

<400> 113

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

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

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

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

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

Leu Ser Ser Ser Val Thr Val Pro Ser Ser Pro Arg Pro Ser Glu Thr
180 185 190

Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys

195

200

205

Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile Cys Thr Val
 210 215 220

Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val
 225 230 235 240

Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val Ala Ile
 245 250 255

Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp Val
 260 265 270

Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe Asn Ser
 275 280 285

Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp Trp Leu
 290 295 300

Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe Pro Ala
 305 310 315 320

Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro Lys Ala Pro
 325 330 335

Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys Asp Lys
 340 345 350

Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr
 355 360 365

Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr
 370 375 380

Gln Pro Ile Met Asn Thr Asn Gly Ser Tyr Phe Val Tyr Ser Lys Leu
 385 390 395 400

Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser
405 410 415

Val Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser
420 425 430

His Ser Pro Gly
435

<210> 114
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BK0-4A8-mIgG1 VL"

<400> 114
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

Gln Pro Lys Ser Ser Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
115 120 125

Glu Leu Glu Thr Asn Lys Ala Thr Leu Val Cys Thr Ile Thr Asp Phe
130 135 140

Tyr Pro Gly Val Val Thr Val Asp Trp Lys Val Asp Gly Thr Pro Val
145 150 155 160

Thr Gln Gly Met Glu Thr Thr Gln Pro Ser Lys Gln Ser Asn Asn Lys
165 170 175

Tyr Met Ala Ser Ser Tyr Leu Thr Leu Thr Ala Arg Ala Trp Glu Arg
180 185 190

His Ser Ser Tyr Ser Cys Gln Val Thr His Glu Gly His Thr Val Glu
195 200 205

Lys Ser Leu Ser Arg Ala Asp Cys Ser
210 215

<210> 115

<211> 439

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0-4A8 IgG4"

<400> 115

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

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

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 Tyr Ile Thr Arg Glu 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
435

<210> 116

<211> 326

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="IgG4"

<400> 116

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

Ser Thr Ser Glu Ser 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 Lys Thr
65 70 75 80

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

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
100 105 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
115 120 125

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

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

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

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

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

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

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

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

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

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

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

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

Leu Ser Leu Ser Leu Gly
325

<210> 117
<211> 439
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BK0-4A8 IgG4"

<400> 117
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile 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
435

<210> 118
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="IgG4"

<400> 118

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

Ser Thr Ser Glu Ser 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 Lys Thr
65 70 75 80

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

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
100 105 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
115 120 125

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

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

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

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

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

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

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

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

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

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

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

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

Leu Ser Leu Ser Leu Gly
325

<210> 119

<211> 438

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0-4A8 IgG2"

<400> 119

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile 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 Asn Phe Gly Thr Gln
180 185 190

Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp

195

200

205

Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala
 210 215 220

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

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

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

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

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

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

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg
 325 330 335

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

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

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

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

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

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

Leu Ser Leu Ser Pro Gly
435

<210> 120

<211> 325

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="IgG2"

<400> 120

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

Ser Thr Ser Glu Ser 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 Asn Phe Gly Thr Gln Thr
65 70 75 80

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

Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
100 105 110

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

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

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

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

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

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

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

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

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

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

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

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

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

Ser Leu Ser Pro Gly
325

<210> 121
<211> 442
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="BK0-4A8 IgG1"

<400> 121
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

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

Lys Ser Thr Ser Gly Gly 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 Gln
180 185 190

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

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

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

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

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
260 265 270

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

Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val

290

295

300

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

Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys
 325 330 335

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

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

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

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

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

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
 420 425 430

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
 435 440

<210> 122

<211> 329

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<220>

<221> source

<223> /note="IgG1"

<400> 122

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 Ala Gly Ala 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
325

<210> 123

<211> 442

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="BK0-4A8 IgG1"

<400> 123

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

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

Lys Ser Thr Ser Gly Gly 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 Gln
180 185 190

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

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

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

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

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
260 265 270

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

Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
290 295 300

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

Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys
325 330 335

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

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

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

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe

385 390 395 400

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

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
420 425 430

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
435 440

<210> 124

<211> 329

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="IgG1"

<400> 124

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
325

<210> 125

<211> 360

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="Human CXCR2"

<400> 125

Met Glu Asp Phe Asn Met Glu Ser Asp Ser Phe Glu Asp Phe Trp Lys
1 5 10 15

Gly Glu Asp Leu Ser Asn Tyr Ser Tyr Ser Ser Thr Leu Pro Pro Phe
20 25 30

Leu Leu Asp Ala Ala Pro Cys Glu Pro Glu Ser Leu Glu Ile Asn Lys
35 40 45

Tyr Phe Val Val Ile Ile Tyr Ala Leu Val Phe Leu Leu Ser Leu Leu
50 55 60

Gly Asn Ser Leu Val Met Leu Val Ile Leu Tyr Ser Arg Val Gly Arg
65 70 75 80

Ser Val Thr Asp Val Tyr Leu Leu Asn Leu Ala Leu Ala Asp Leu Leu

85

90

95

Phe Ala Leu Thr Leu Pro Ile Trp Ala Ala Ser Lys Val Asn Gly Trp
 100 105 110

Ile Phe Gly Thr Phe Leu Cys Lys Val Val Ser Leu Leu Lys Glu Val
 115 120 125

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

Tyr Leu Ala Ile Val His Ala Thr Arg Thr Leu Thr Gln Lys Arg Tyr
 145 150 155 160

Leu Val Lys Phe Ile Cys Leu Ser Ile Trp Gly Leu Ser Leu Leu Leu
 165 170 175

Ala Leu Pro Val Leu Leu Phe Arg Arg Thr Val Tyr Ser Ser Asn Val
 180 185 190

Ser Pro Ala Cys Tyr Glu Asp Met Gly Asn Asn Thr Ala Asn Trp Arg
 195 200 205

Met Leu Leu Arg Ile Leu Pro Gln Ser Phe Gly Phe Ile Val Pro Leu
 210 215 220

Leu Ile Met Leu Phe Cys Tyr Gly Phe Thr Leu Arg Thr Leu Phe Lys
 225 230 235 240

Ala His Met Gly Gln Lys His Arg Ala Met Arg Val Ile Phe Ala Val
 245 250 255

Val Leu Ile Phe Leu Leu Cys Trp Leu Pro Tyr Asn Leu Val Leu Leu
 260 265 270

Ala Asp Thr Leu Met Arg Thr Gln Val Ile Gln Glu Thr Cys Glu Arg
 275 280 285

Arg Asn His Ile Asp Arg Ala Leu Asp Ala Thr Glu Ile Leu Gly Ile
290 295 300

Leu His Ser Cys Leu Asn Pro Leu Ile Tyr Ala Phe Ile Gly Gln Lys
305 310 315 320

Phe Arg His Gly Leu Leu Lys Ile Leu Ala Ile His Gly Leu Ile Ser
325 330 335

Lys Asp Ser Leu Pro Lys Asp Ser Arg Pro Ser Phe Val Gly Ser Ser
340 345 350

Ser Gly His Thr Ser Thr Thr Leu
355 360

<210> 126
<211> 359
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="Mouse CXCR2"

<400> 126
Met Gly Glu Phe Lys Val Asp Lys Phe Asn Ile Glu Asp Phe Phe Ser
1 5 10 15

Gly Asp Leu Asp Ile Phe Asn Tyr Ser Ser Gly Met Pro Ser Ile Leu
20 25 30

Pro Asp Ala Val Pro Cys His Ser Glu Asn Leu Glu Ile Asn Ser Tyr
35 40 45

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

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

Val Thr Asp Val Tyr Leu Leu Asn Leu Ala Ile Ala Asp Leu Phe Phe
85 90 95

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

Phe Gly Ser Thr Leu Cys Lys Ile Phe Ser Tyr Val Lys Glu Val Thr
115 120 125

Phe Tyr Ser Ser Val Leu Leu Leu Ala Cys Ile Ser Met Asp Arg Tyr
130 135 140

Leu Ala Ile Val His Ala Thr Ser Thr Leu Ile Gln Lys Arg His Leu
145 150 155 160

Val Lys Phe Val Cys Ile Ala Met Trp Leu Leu Ser Val Ile Leu Ala
165 170 175

Leu Pro Ile Leu Ile Leu Arg Asn Pro Val Lys Val Asn Leu Ser Thr
180 185 190

Leu Val Cys Tyr Glu Asp Val Gly Asn Asn Thr Ser Arg Leu Arg Val
195 200 205

Val Leu Arg Ile Leu Pro Gln Thr Phe Gly Phe Leu Val Pro Leu Leu
210 215 220

Ile Met Leu Phe Cys Tyr Gly Phe Thr Leu Arg Thr Leu Phe Lys Ala
225 230 235 240

His Met Gly Gln Lys His Arg Ala Met Arg Val Ile Phe Ala Val Val
245 250 255

Leu Val Phe Leu Leu Cys Trp Leu Pro Tyr Asn Leu Val Leu Phe Thr
260 265 270

Asp Thr Leu Met Arg Thr Lys Leu Ile Lys Glu Thr Cys Glu Arg Arg
275 280 285

Asp Asp Ile Asp Lys Ala Leu Asn Ala Thr Glu Ile Leu Gly Phe Leu
290 295 300

His Ser Cys Leu Asn Pro Ile Ile Tyr Ala Phe Ile Gly Gln Lys Phe
305 310 315 320

Arg His Gly Leu Leu Lys Ile Met Ala Thr Tyr Gly Leu Val Ser Lys
325 330 335

Glu Phe Leu Ala Lys Glu Gly Arg Pro Ser Phe Val Ser Ser Ser Ser
340 345 350

Ala Asn Thr Ser Thr Thr Leu
355

<210> 127

<211> 355

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="cynomolgus CXCR2"

<400> 127

Met Gln Ser Phe Asn Phe Glu Asp Phe Trp Glu Asn Glu Asp Phe Ser
1 5 10 15

Asn Tyr Ser Tyr Ser Ser Asp Leu Pro Pro Ser Leu Pro Asp Val Ala
20 25 30

Pro Cys Arg Pro Glu Ser Leu Glu Ile Asn Lys Tyr Phe Val Val Ile
35 40 45

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

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

Tyr Leu Leu Asn Leu Ala Met Ala Asp Leu Leu Phe Ala Leu Thr Leu
85 90 95

Pro Ile Trp Ala Ala Ala Lys Val Asn Gly Trp Ile Phe Gly Thr Phe
100 105 110

Leu Cys Lys Val Val Ser Leu Leu Lys Glu Val Asn Phe Tyr Ser Gly
115 120 125

Ile Leu Leu Leu Ala Cys Ile Ser Val Asp Arg Tyr Leu Ala Ile Val
130 135 140

His Ala Thr Arg Thr Leu Thr Gln Lys Arg Tyr Leu Val Lys Phe Val
145 150 155 160

Cys Leu Ser Ile Trp Ser Leu Ser Leu Leu Ala Leu Pro Val Leu
165 170 175

Leu Phe Arg Arg Thr Val Tyr Leu Thr Tyr Ile Ser Pro Val Cys Tyr
180 185 190

Glu Asp Met Gly Asn Asn Thr Ala Lys Trp Arg Met Val Leu Arg Ile
195 200 205

Leu Pro Gln Thr Phe Gly Phe Ile Leu Pro Leu Leu Ile Met Leu Phe
210 215 220

Cys Tyr Gly Phe Thr Leu Arg Thr Leu Phe Lys Ala His Met Gly Gln

Met Val Leu Glu Val Ser Asp His Gln Val Leu Asn Asp Ala Glu Val
1 5 10 15

Ala Ala Leu Leu Glu Asn Phe Ser Ser Ser Tyr Asp Tyr Gly Glu Asn
20 25 30

Glu Ser Asp Ser Cys Cys Thr Ser Pro Pro Cys Pro Gln Asp Phe Ser
35 40 45

Leu Asn Phe Asp Arg Ala Phe Leu Pro Ala Leu Tyr Ser Leu Leu Phe
50 55 60

Leu Leu Gly Leu Leu Gly Asn Gly Ala Val Ala Ala Val Leu Leu Ser
65 70 75 80

Arg Arg Thr Ala Leu Ser Ser Thr Asp Thr Phe Leu Leu His Leu Ala
85 90 95

Val Ala Asp Thr Leu Leu Val Leu Thr Leu Pro Leu Trp Ala Val Asp
100 105 110

Ala Ala Val Gln Trp Val Phe Gly Ser Gly Leu Cys Lys Val Ala Gly
115 120 125

Ala Leu Phe Asn Ile Asn Phe Tyr Ala Gly Ala Leu Leu Leu Ala Cys
130 135 140

Ile Ser Phe Asp Arg Tyr Leu Asn Ile Val His Ala Thr Gln Leu Tyr
145 150 155 160

Arg Arg Gly Pro Pro Ala Arg Val Thr Leu Thr Cys Leu Ala Val Trp
165 170 175

Gly Leu Cys Leu Leu Phe Ala Leu Pro Asp Phe Ile Phe Leu Ser Ala
180 185 190

His His Asp Glu Arg Leu Asn Ala Thr His Cys Gln Tyr Asn Phe Pro
195 200 205

Gln Val Gly Arg Thr Ala Leu Arg Val Leu Gln Leu Val Ala Gly Phe
210 215 220

Leu Leu Pro Leu Leu Val Met Ala Tyr Cys Tyr Ala His Ile Leu Ala
225 230 235 240

Val Leu Leu Val Ser Arg Gly Gln Arg Arg Leu Arg Ala Met Arg Leu
245 250 255

Val Val Val Val Val Val Ala Phe Ala Leu Cys Trp Thr Pro Tyr His
260 265 270

Leu Val Val Leu Val Asp Ile Leu Met Asp Leu Gly Ala Leu Ala Arg
275 280 285

Asn Cys Gly Arg Glu Ser Arg Val Asp Val Ala Lys Ser Val Thr Ser
290 295 300

Gly Leu Gly Tyr Met His Cys Cys Leu Asn Pro Leu Leu Tyr Ala Phe
305 310 315 320

Val Gly Val Lys Phe Arg Glu Arg Met Trp Met Leu Leu Leu Arg Leu
325 330 335

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

Arg Asp Ser Ser Trp Ser Glu Thr Ser Glu Ala Ser Tyr Ser Gly Leu
355 360 365

<210> 129

<211> 352

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic

polypeptide"

<220>

<221> source

<223> /note="human CXCR4"

<400> 129

Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
1 5 10 15

Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
20 25 30

Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
35 40 45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
50 55 60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
65 70 75 80

Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
85 90 95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
100 105 110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
115 120 125

Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
130 135 140

Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
145 150 155 160

Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
165 170 175

Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
180 185 190

Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
195 200 205

Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
210 215 220

Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
225 230 235 240

Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
245 250 255

Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
260 265 270

Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
275 280 285

Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
290 295 300

Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
305 310 315 320

Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly
325 330 335

His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
340 345 350

<210> 130

<211> 372

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="human CXCR5"

<400> 130

Met Asn Tyr Pro Leu Thr Leu Glu Met Asp Leu Glu Asn Leu Glu Asp
1 5 10 15

Leu Phe Trp Glu Leu Asp Arg Leu Asp Asn Tyr Asn Asp Thr Ser Leu
20 25 30

Val Glu Asn His Leu Cys Pro Ala Thr Glu Gly Pro Leu Met Ala Ser
35 40 45

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

Gly Val Ile Gly Asn Val Leu Val Leu Val Ile Leu Glu Arg His Arg
65 70 75 80

Gln Thr Arg Ser Ser Thr Glu Thr Phe Leu Phe His Leu Ala Val Ala
85 90 95

Asp Leu Leu Leu Val Phe Ile Leu Pro Phe Ala Val Ala Glu Gly Ser
100 105 110

Val Gly Trp Val Leu Gly Thr Phe Leu Cys Lys Thr Val Ile Ala Leu
115 120 125

His Lys Val Asn Phe Tyr Cys Ser Ser Leu Leu Leu Ala Cys Ile Ala
130 135 140

Val Asp Arg Tyr Leu Ala Ile Val His Ala Val His Ala Tyr Arg His
145 150 155 160

Arg Arg Leu Leu Ser Ile His Ile Thr Cys Gly Thr Ile Trp Leu Val
165 170 175

Gly Phe Leu Leu Ala Leu Pro Glu Ile Leu Phe Ala Lys Val Ser Gln
180 185 190

Gly His His Asn Asn Ser Leu Pro Arg Cys Thr Phe Ser Gln Glu Asn
195 200 205

Gln Ala Glu Thr His Ala Trp Phe Thr Ser Arg Phe Leu Tyr His Val
210 215 220

Ala Gly Phe Leu Leu Pro Met Leu Val Met Gly Trp Cys Tyr Val Gly
225 230 235 240

Val Val His Arg Leu Arg Gln Ala Gln Arg Arg Pro Gln Arg Gln Lys
245 250 255

Ala Val Arg Val Ala Ile Leu Val Thr Ser Ile Phe Phe Leu Cys Trp
260 265 270

Ser Pro Tyr His Ile Val Ile Phe Leu Asp Thr Leu Ala Arg Leu Lys
275 280 285

Ala Val Asp Asn Thr Cys Lys Leu Asn Gly Ser Leu Pro Val Ala Ile
290 295 300

Thr Met Cys Glu Phe Leu Gly Leu Ala His Cys Cys Leu Asn Pro Met
305 310 315 320

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

Leu Thr Lys Leu Gly Cys Thr Gly Pro Ala Ser Leu Cys Gln Leu Phe
340 345 350

Pro Ser Trp Arg Arg Ser Ser Leu Ser Glu Ser Glu Asn Ala Thr Ser
355 360 365

Leu Thr Thr Phe
370

<210> 131
<211> 342
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="human CXCR6"

<400> 131
Met Ala Glu His Asp Tyr His Glu Asp Tyr Gly Phe Ser Ser Phe Asn
1 5 10 15

Asp Ser Ser Gln Glu Glu His Gln Asp Phe Leu Gln Phe Ser Lys Val
20 25 30

Phe Leu Pro Cys Met Tyr Leu Val Val Phe Val Cys Gly Leu Val Gly
35 40 45

Asn Ser Leu Val Leu Val Ile Ser Ile Phe Tyr His Lys Leu Gln Ser
50 55 60

Leu Thr Asp Val Phe Leu Val Asn Leu Pro Leu Ala Asp Leu Val Phe
65 70 75 80

Val Cys Thr Leu Pro Phe Trp Ala Tyr Ala Gly Ile His Glu Trp Val
85 90 95

Phe Gly Gln Val Met Cys Lys Ser Leu Leu Gly Ile Tyr Thr Ile Asn
100 105 110

Phe Tyr Thr Ser Met Leu Ile Leu Thr Cys Ile Thr Val Asp Arg Phe

115

120

125

Ile Val Val Val Lys Ala Thr Lys Ala Tyr Asn Gln Gln Ala Lys Arg
 130 135 140

Met Thr Trp Gly Lys Val Thr Ser Leu Leu Ile Trp Val Ile Ser Leu
 145 150 155 160

Leu Val Ser Leu Pro Gln Ile Ile Tyr Gly Asn Val Phe Asn Leu Asp
 165 170 175

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

Ala Thr Gln Met Thr Leu Gly Phe Phe Leu Pro Leu Leu Thr Met Ile
 195 200 205

Val Cys Tyr Ser Val Ile Ile Lys Thr Leu Leu His Ala Gly Gly Phe
 210 215 220

Gln Lys His Arg Ser Leu Lys Ile Ile Phe Leu Val Met Ala Val Phe
 225 230 235 240

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

His Trp Glu Tyr Tyr Ala Met Thr Ser Phe His Tyr Thr Ile Met Val
 260 265 270

Thr Glu Ala Ile Ala Tyr Leu Arg Ala Cys Leu Asn Pro Val Leu Tyr
 275 280 285

Ala Phe Val Ser Leu Lys Phe Arg Lys Asn Phe Trp Lys Leu Val Lys
 290 295 300

Asp Ile Gly Cys Leu Pro Tyr Leu Gly Val Ser His Gln Trp Lys Ser
 305 310 315 320

Ser Glu Asp Asn Ser Lys Thr Phe Ser Ala Ser His Asn Val Glu Ala
325 330 335

Thr Ser Met Phe Gln Leu
340

<210> 132
<211> 362
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="human CXCR7"

<400> 132
Met Asp Leu His Leu Phe Asp Tyr Ser Glu Pro Gly Asn Phe Ser Asp
1 5 10 15

Ile Ser Trp Pro Cys Asn Ser Ser Asp Cys Ile Val Val Asp Thr Val
20 25 30

Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser
35 40 45

Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val
50 55 60

Val Val Trp Val Asn Ile Gln Ala Lys Thr Thr Gly Tyr Asp Thr His
65 70 75 80

Cys Tyr Ile Leu Asn Leu Ala Ile Ala Asp Leu Trp Val Val Leu Thr
85 90 95

Ile Pro Val Trp Val Val Ser Leu Val Gln His Asn Gln Trp Pro Met
100 105 110

Gly Glu Leu Thr Cys Lys Val Thr His Leu Ile Phe Ser Ile Asn Leu
115 120 125

Phe Gly Ser Ile Phe Phe Leu Thr Cys Met Ser Val Asp Arg Tyr Leu
130 135 140

Ser Ile Thr Tyr Phe Thr Asn Thr Pro Ser Ser Arg Lys Lys Met Val
145 150 155 160

Arg Arg Val Val Cys Ile Leu Val Trp Leu Leu Ala Phe Cys Val Ser
165 170 175

Leu Pro Asp Thr Tyr Tyr Leu Lys Thr Val Thr Ser Ala Ser Asn Asn
180 185 190

Glu Thr Tyr Cys Arg Ser Phe Tyr Pro Glu His Ser Ile Lys Glu Trp
195 200 205

Leu Ile Gly Met Glu Leu Val Ser Val Val Leu Gly Phe Ala Val Pro
210 215 220

Phe Ser Ile Ile Ala Val Phe Tyr Phe Leu Leu Ala Arg Ala Ile Ser
225 230 235 240

Ala Ser Ser Asp Gln Glu Lys His Ser Ser Arg Lys Ile Ile Phe Ser
245 250 255

Tyr Val Val Val Phe Leu Val Cys Trp Leu Pro Tyr His Val Ala Val
260 265 270

Leu Leu Asp Ile Phe Ser Ile Leu His Tyr Ile Pro Phe Thr Cys Arg
275 280 285

Leu Glu His Ala Leu Phe Thr Ala Leu His Val Thr Gln Cys Leu Ser
290 295 300

Leu Val His Cys Cys Val Asn Pro Val Leu Tyr Ser Phe Ile Asn Arg
305 310 315 320

Asn Tyr Arg Tyr Glu Leu Met Lys Ala Phe Ile Phe Lys Tyr Ser Ala
325 330 335

Lys Thr Gly Leu Thr Lys Leu Ile Asp Ala Ser Arg Val Ser Glu Thr
340 345 350

Glu Tyr Ser Ala Leu Glu Gln Ser Thr Lys
355 360

<210> 133

<211> 350

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="Human CXCR1"

<400> 133

Met Ser Asn Ile Thr Asp Pro Gln Met Trp Asp Phe Asp Asp Leu Asn
1 5 10 15

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

Glu Thr Glu Thr Leu Asn Lys Tyr Val Val Ile Ile Ala Tyr Ala Leu
35 40 45

Val Phe Leu Leu Ser Leu Leu Gly Asn Ser Leu Val Met Leu Val Ile
50 55 60

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

Leu Ala Leu Ala Asp Leu Leu Phe Ala Leu Thr Leu Pro Ile Trp Ala
85 90 95

Ala Ser Lys Val Asn Gly Trp Ile Phe Gly Thr Phe Leu Cys Lys Val
100 105 110

Val Ser Leu Leu Lys Glu Val Asn Phe Tyr Ser Gly Ile Leu Leu Leu
115 120 125

Ala Cys Ile Ser Val Asp Arg Tyr Leu Ala Ile Val His Ala Thr Arg
130 135 140

Thr Leu Thr Gln Lys Arg His Leu Val Lys Phe Val Cys Leu Gly Cys
145 150 155 160

Trp Gly Leu Ser Met Asn Leu Ser Leu Pro Phe Phe Leu Phe Arg Gln
165 170 175

Ala Tyr His Pro Asn Asn Ser Ser Pro Val Cys Tyr Glu Val Leu Gly
180 185 190

Asn Asp Thr Ala Lys Trp Arg Met Val Leu Arg Ile Leu Pro His Thr
195 200 205

Phe Gly Phe Ile Val Pro Leu Phe Val Met Leu Phe Cys Tyr Gly Phe
210 215 220

Thr Leu Arg Thr Leu Phe Lys Ala His Met Gly Gln Lys His Arg Ala
225 230 235 240

Met Arg Val Ile Phe Ala Val Val Leu Ile Phe Leu Leu Cys Trp Leu
245 250 255

Pro Tyr Asn Leu Val Leu Leu Ala Asp Thr Leu Met Arg Thr Gln Val
260 265 270

Ile Gln Glu Ser Cys Glu Arg Arg Asn Asn Ile Gly Arg Ala Leu Asp

275

280

285

Ala Thr Glu Ile Leu Gly Phe Leu His Ser Cys Leu Asn Pro Ile Ile
290 295 300

Tyr Ala Phe Ile Gly Gln Asn Phe Arg His Gly Phe Leu Lys Ile Leu
305 310 315 320

Ala Met His Gly Leu Val Ser Lys Glu Phe Leu Ala Arg His Arg Val
325 330 335

Thr Ser Tyr Thr Ser Ser Ser Val Asn Val Ser Ser Asn Leu
340 345 350

<210> 134

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="Human Lambda light chain constant region"

<400> 134

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

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

Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro
35 40 45

Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn
50 55 60

Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys
65 70 75 80

Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val
85 90 95

Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
100 105

<210> 135

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="Human Kappa light chain constant region"

<400> 135

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
35 40 45

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

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

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

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
100 105

<210> 136

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH S32D"

<400> 136

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 137

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH S35Q"

<400> 137

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 138

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH S35D"

<400> 138
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 139
<211> 113
<212> PRT
<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH S35K"

<400> 139

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 140

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH A50S"

<400> 140

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 141

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH R55Q"

<400> 141
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 142
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH R55D"

<400> 142

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 143

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH R55H"

<400> 143

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

1	5	10	15
Ser	Leu	Arg	Leu
20	Ser	Cys	Ala
	25	Ala	Ser
		Gly	Phe
		Thr	Phe
		30	Ser
		Ser	Ser
Thr	Met	Ser	Trp
35	Val	Arg	Gln
	40	Ala	Pro
		Gly	Lys
		Gly	Leu
		45	Glu
		Trp	Val
Ser	Ala	Ile	Ser
50	Gly	Arg	Gly
	55	His	Asn
		Thr	Tyr
		Tyr	Ala
		60	Asp
		Ser	Val
Lys	Gly	Arg	Phe
65	Thr	Ile	Ser
	70	Arg	Asp
		Asn	Ser
		75	Arg
		Asn	Thr
		Leu	Tyr
		80	
Leu	Gln	Met	Asn
	85	Ser	Leu
		Arg	Ala
		Glu	Asp
		90	Thr
		Ala	Val
		Tyr	Tyr
		95	Cys
Ala	Ile	Gln	Met
	100	Gly	Tyr
		Trp	Gly
		Gln	Gly
		105	Ile
		Leu	Val
		Thr	Val
		110	Ser

Ser

<210> 144
 <211> 113
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
 <221> source
 <223> /note="4A8 VH M96S"

<400> 144
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

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

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

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

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

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

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

Ser

<210> 145

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH M96D"

<400> 145

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

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

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

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

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

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

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

Ser

<210> 146

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH M96H"

<400> 146

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

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

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

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

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

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

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

Ser

<210> 147
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH M96L"

<400> 147
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

Ser Ala Ile Ser Gly Arg Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val

50

55

60

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

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

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

Ser

<210> 148

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VH M96W"

<400> 148

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

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

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

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

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

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

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

Ser

<210> 149

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH M96Y"

<400> 149

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

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

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

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

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

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

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

Ser

<210> 150
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Y102Q"

<400> 150
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Ala Ile Gln Met Gly Gln Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 151
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 VH Y102D"

<400> 151
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

100

105

110

Ser

<210> 152

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL V51D"

<400> 152

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
 35 40 45

Met Ile Tyr Glu Asp Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
 85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
 100 105 110

<210> 153
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VL V51Y"

<400> 153
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Tyr Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 154
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL R54D"

<400> 154

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Asp Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 155

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 VL Y91S"

<400> 155

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Ser Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 156

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL Y91H"

<400> 156

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser His Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 157

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N94H"

<400> 157

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe

50

55

60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly His
 85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
 100 105 110

<210> 158

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<220>

<221> source

<223> /note="4A8 VL N95aS"

<400> 158

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
 35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Ser Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 159

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VL N95aW"

<400> 159

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Trp Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 160
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VL V97S"

<400> 160
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Ser Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 161
<211> 111
<212> PRT
<213> Artificial Sequence

<220>

<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VL V97D"

<400> 161
Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Asp Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 162
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 VH Variant 102 M34Q_A40P_N56S_R75K_M96E"

<400> 162

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

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

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

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

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

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

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

Ser

<210> 163

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH Variant 103 M34Q_A40P_R53S_R55G_N56S_R75K"

<400> 163

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

1	5	10	15
Ser	Leu	Arg	Leu
	20		
Ser	Cys	Ala	Ala
		25	
Ser	Gly	Phe	Thr
			30
Ser	Ser	Ser	
Thr	Gln	Ser	Trp
	35		
Val	Arg	Gln	Pro
		40	
Gly	Lys	Gly	Leu
			45
Glu	Trp	Val	
Ser	Ala	Ile	Ser
	50		
Gly	Ser	Gly	Gly
		55	
Ser	Thr	Tyr	Tyr
			60
Ala	Asp	Ser	Val
Lys	Gly	Arg	Phe
	65		
Thr	Ile	Ser	Arg
	70		
Asp	Asn	Ser	Lys
		75	
Asn	Thr	Leu	Tyr
			80
Leu	Gln	Met	Asn
			85
Ser	Leu	Arg	Ala
Glu	Asp	Thr	Ala
	90		
Val	Tyr	Tyr	Cys
			95
Ala	Ile	Gln	Met
			100
Gly	Tyr	Trp	Gly
Gln	Gly	Ile	Leu
	105		
Val	Thr	Val	Ser
			110

Ser

<210> 164
 <211> 113
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
 <221> source
 <223> /note="4A8 VH Variant 104 M34Q_A40P_R53S_R55G_N56S_R75K_M96K"

<400> 164
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

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

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

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

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

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

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

Ser

<210> 165

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH Variant 105 M34Q_A40P_R53S_R55G_N56S_R75K_M96A"

<400> 165

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

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

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

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

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

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

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

Ser

<210> 166

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>

<221> source

<223> /note="4A8 VH Variant 106 M34Q_A40P_R53S_R55G_N56S_R75K_M96E"

<400> 166

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

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

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

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

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

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

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

Ser

<210> 167
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 Consensus VH"

<220>
<221> VARIANT
<222> (32)..(32)
<223> /replace="Q" or "H" or "L" or "W" or "Y"

<220>
<221> VARIANT
<222> (33)..(33)
<223> /replace="A"

<220>
<221> VARIANT
<222> (34)..(34)

<223> /replace="Q" or "D" or "H" or "W"

<220>

<221> VARIANT

<222> (51)..(51)

<223> /replace="H"

<220>

<221> VARIANT

<222> (53)..(53)

<223> /replace="D"

<220>

<221> VARIANT

<222> (54)..(54)

<223> /replace="S" or "Q"

<220>

<221> VARIANT

<222> (55)..(55)

<223> /replace="D"

<220>

<221> VARIANT

<222> (57)..(57)

<223> /replace="S"

<220>

<221> VARIANT

<222> (98)..(98)

<223> /replace="K"

<220>

<221> VARIANT

<222> (100)..(100)

<223> /replace="A" or "Q" or "K"

<220>

<221> VARIANT

<222> (101)..(101)

<223> /replace="D"

<220>

<221> VARIANT

<222> (102)..(102)

<223> /replace="S" or "K"

<220>

<221> SITE

<222> (1)..(113)

<223> /note="Variant residues given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 167

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

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

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 168

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>

<221> source

<223> /note="4A8 Consensus VL"

<220>
<221> VARIANT
<222> (52)..(52)
<223> /replace="D"

<220>
<221> VARIANT
<222> (54)..(54)
<223> /replace="D" or "S"

<220>
<221> VARIANT
<222> (55)..(55)
<223> /replace="A" or "D" or "H"

<220>
<221> VARIANT
<222> (56)..(56)
<223> /replace="Q"

<220>
<221> VARIANT
<222> (93)..(93)
<223> /replace="A"

<220>
<221> VARIANT
<222> (96)..(96)
<223> /replace="A" or "S" or "K" or "L" or "W" or "Y"

<220>
<221> VARIANT
<222> (98)..(98)
<223> /replace="Q" or "D" or "H" or "K" or "L" or "Y"

<220>
<221> VARIANT
<222> (101)..(101)
<223> /replace="A" or "K"

<220>
<221> SITE
<222> (1)..(111)
<223> /note="Variant residues given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 168

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 169
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VH CDR1"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace="Q" or "H" or "L" or "W" or "Y"

<220>
<221> VARIANT

<222> (3)..(3)
<223> /replace="A"

<220>
<221> VARIANT
<222> (4)..(4)
<223> /replace="Q" or "D" or "H" or "W"

<220>
<221> SITE
<222> (1)..(5)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 169
Ser Ser Thr Met Ser
1 5

<210> 170
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VH CDR2"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace="H"

<220>
<221> VARIANT
<222> (4)..(4)
<223> /replace="D"

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace="S" or "Q"

<220>
<221> VARIANT
<222> (6)..(6)
<223> /replace="D"

<220>
<221> VARIANT
<222> (8)..(8)
<223> /replace="S"

<220>
<221> SITE
<222> (1)..(17)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 170
Ala Ile Ser Gly Arg Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 171
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VH CDR3"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace="A" or "Q" or "K"

<220>
<221> VARIANT
<222> (3)..(3)
<223> /replace="D"

<220>
<221> VARIANT
<222> (4)..(4)
<223> /replace="S" or "K"

<220>
<221> SITE
<222> (1)..(4)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 171
Gln Met Gly Tyr
1

<210> 172
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VL CDR1"

<400> 172
Ile Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Tyr Val Ser
1 5 10

<210> 173
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VL CDR2"

<220>
<221> VARIANT
<222> (1)..(1)
<223> /replace="D"

<220>
<221> VARIANT
<222> (3)..(3)
<223> /replace="D" or "S"

<220>
<221> VARIANT
<222> (4)..(4)
<223> /replace="A" or "D" or "H"

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace="Q"

<220>
<221> SITE
<222> (1)..(7)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 173
Glu Val Asn Lys Arg Pro Ser
1 5

<210> 174
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VL CDR3"

<220>

<221> VARIANT
<222> (3)..(3)
<223> /replace="A"

<220>
<221> VARIANT
<222> (6)..(6)
<223> /replace="A" or "S" or "K" or "L" or "W" or "Y"

<220>
<221> VARIANT
<222> (8)..(8)
<223> /replace="Q" or "D" or "H" or "K" or "L" or "Y"

<220>
<221> VARIANT
<222> (11)..(11)
<223> /replace="A" or "K"

<220>
<221> SITE
<222> (1)..(11)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 174
Ser Ser Tyr Ala Gly Asn Asn Asn Phe Gly Val
1 5 10

<210> 175
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="4A8 VHCDR1"

<400> 175
Ser Ser Thr Met Ser
1 5

<210> 176
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 S32Q VHCDR1"

<400> 176
Ser Gln Thr Met Ser
1 5

<210> 177
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 S32H VHCDR1"

<400> 177
Ser His Thr Met Ser
1 5

<210> 178
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source

<223> /note="4A8 S32L VHCDR1"

<400> 178

Ser Leu Thr Met Ser

1 5

<210> 179

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 S32W VHCDR1"

<400> 179

Ser Trp Thr Met Ser

1 5

<210> 180

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 S32Y VHCDR1"

<400> 180

Ser Tyr Thr Met Ser

1 5

<210> 181

<211> 5

<212> PRT

<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 T33A VHCDR1"

<400> 181
Ser Ser Ala Met Ser
1 5

<210> 182
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 M34Q VHCDR1"

<400> 182
Ser Ser Thr Gln Ser
1 5

<210> 183
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 M34D VHCDR1"

<400> 183
Ser Ser Thr Asp Ser
1 5

<210> 184
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 M34H VHCDR1"

<400> 184
Ser Ser Thr His Ser
1 5

<210> 185
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 M34W VHCDR1"

<400> 185
Ser Ser Thr Trp Ser
1 5

<210> 186
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 VHCDR2"

<400> 186
Ala Ile Ser Gly Arg Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 187
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="4A8 I51H VHCDR2"

<400> 187
Ala His Ser Gly Arg Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 188
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="4A8 G52aD VHCDR2"

<400> 188

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

Gly

<210> 189

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>

<221> source

<223> /note="4A8 R53S VHCDR2"

<400> 189

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

Gly

<210> 190

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>

<221> source

<223> /note="4A8 R53Q VHCDR2"

<400> 190

Ala Ile Ser Gly Gln Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 191
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 G54D VHCDR2"

<400> 191
Ala Ile Ser Gly Arg Asp Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 192
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N56S VHCDR2"

<400> 192
Ala Ile Ser Gly Arg Gly Arg Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 193
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 103,104, 105 VHCDR2"

<400> 193
Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 194
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 VHCDR3"

<400> 194
Gln Met Gly Tyr
1

<210> 195
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 M96A VHCDR3"

<400> 195

Gln Ala Gly Tyr

1

<210> 196

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 M96Q VHCDR3"

<400> 196

Gln Gln Gly Tyr

1

<210> 197

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 M96K VHCDR3"

<400> 197

Gln Lys Gly Tyr

1

<210> 198
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 G101D VHCDR3"

<400> 198
Gln Met Asp Tyr
1

<210> 199
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 Y102S VHCDR3"

<400> 199
Gln Met Gly Ser
1

<210> 200
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source

<223> /note="4A8 Y102K VHCDR3"

<400> 200

Gln Met Gly Lys

1

<210> 201

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 VLCDR1 and Consensus VL CDR1"

<400> 201

Ile Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Tyr Val Ser

1

5

10

<210> 202

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 VLCDR2"

<400> 202

Glu Val Asn Lys Arg Pro Ser

1

5

<210> 203

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 E50D VLCDR2"

<400> 203
Asp Val Asn Lys Arg Pro Ser
1 5

<210> 204
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N52D VLCDR2"

<400> 204
Glu Val Asp Lys Arg Pro Ser
1 5

<210> 205
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N52S VLCDR2"

<400> 205
Glu Val Ser Lys Arg Pro Ser
1 5

<210> 206
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 K53A VLCDR2"

<400> 206
Glu Val Asn Ala Arg Pro Ser
1 5

<210> 207
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 K53D VLCDR2"

<400> 207
Glu Val Asn Asp Arg Pro Ser
1 5

<210> 208
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 K53H VLCDR2"

<400> 208
Glu Val Asn His Arg Pro Ser
1 5

<210> 209
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="4A8 R54Q VLCDR2"

<400> 209
Glu Val Asn Lys Gln Pro Ser
1 5

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="4A8 VLCDR3"

<400> 210
Ser Ser Tyr Ala Gly Asn Asn Asn Phe Gly Val
1 5 10

<210> 211
<211> 11
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 Y91A VLCDR3"

<400> 211

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

<210> 212

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 N94A VLCDR3"

<400> 212

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

<210> 213

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 N94S VLCDR3"

<400> 213

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

<210> 214

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 N94K VLCDR3"

<400> 214

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

<210> 215

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 N94L VLCDR3"

<400> 215

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

<210> 216

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic

peptide"

<220>

<221> source

<223> /note="4A8 N94W VLCDR3"

<400> 216

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

<210> 217

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 N94Y VLCDR3"

<400> 217

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

<210> 218

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="4A8 N95aQ VLCDR3"

<400> 218

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

<210> 219

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N95aD VLCDR3"

<400> 219
Ser Ser Tyr Ala Gly Asn Asn Asp Phe Gly Val
1 5 10

<210> 220
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N95aH VLCDR3"

<400> 220
Ser Ser Tyr Ala Gly Asn Asn His Phe Gly Val
1 5 10

<210> 221
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N95aK VLCDR3"

<400> 221
Ser Ser Tyr Ala Gly Asn Asn Lys Phe Gly Val
1 5 10

<210> 222
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 N95aL VLCDR3"

<400> 222
Ser Ser Tyr Ala Gly Asn Asn Leu Phe Gly Val
1 5 10

<210> 223
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="A48 N95aYVLCDR3"

<400> 223
Ser Ser Tyr Ala Gly Asn Asn Tyr Phe Gly Val
1 5 10

<210> 224
<211> 11
<212> PRT
<213> Artificial Sequence

<220>

<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 V97A VLCDR3"

<400> 224
Ser Ser Tyr Ala Gly Asn Asn Asn Phe Gly Ala
1 5 10

<210> 225
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="4A8 V97K VLCDR3"

<400> 225
Ser Ser Tyr Ala Gly Asn Asn Asn Phe Gly Lys
1 5 10

<210> 226
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<220>
<221> source
<223> /note="4A8 Consensus VH"

<220>
<221> VARIANT
<222> (34)..(34)

<223> /replace="Q"

<220>

<221> VARIANT

<222> (40)..(40)

<223> /replace="P"

<220>

<221> VARIANT

<222> (54)..(54)

<223> /replace="S"

<220>

<221> VARIANT

<222> (56)..(56)

<223> /replace="G"

<220>

<221> VARIANT

<222> (57)..(57)

<223> /replace="S"

<220>

<221> VARIANT

<222> (76)..(76)

<223> /replace="K"

<220>

<221> VARIANT

<222> (98)..(98)

<223> /replace="K"

<220>

<221> VARIANT

<222> (100)..(100)

<223> /replace="K" or "A"

<220>

<221> SITE

<222> (1)..(113)

<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 226

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

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

20

25

30

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

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

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

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

Ala Ile Gln Met Gly Tyr Trp Gly Gln Gly Ile Leu Val Thr Val Ser
100 105 110

Ser

<210> 227
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<220>
<221> source
<223> /note="4A8 Consensus VL"

<220>
<221> VARIANT
<222> (43)..(43)
<223> /replace="G"

<220>
<221> VARIANT
<222> (54)..(54)

<223> /replace="S"

<220>

<221> VARIANT

<222> (96)..(96)

<223> /replace="S"

<220>

<221> SITE

<222> (1)..(111)

<223> /note="Variant residues given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 227

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

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Asp Lys Ala Pro Lys Leu
35 40 45

Met Ile Tyr Glu Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Gly Asn
85 90 95

Asn Asn Phe Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 228

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="Consensus VH CDR1"

<220>

<221> VARIANT

<222> (4)..(4)

<223> /replace="Q"

<220>

<221> SITE

<222> (1)..(5)

<223> /note="Variant residues given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 228

Ser Ser Thr Met Ser

1 5

<210> 229

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>

<221> source

<223> /note="Consensus VH CDR2"

<220>

<221> VARIANT

<222> (5)..(5)

<223> /replace="S"

<220>

<221> VARIANT

<222> (7)..(7)

<223> /replace="G"

<220>
<221> VARIANT
<222> (8)..(8)
<223> /replace="S"

<220>
<221> SITE
<222> (1)..(17)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 229
Ala Ile Ser Gly Arg Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 230
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<220>
<221> source
<223> /note="Consensus VH CDR3"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace="K" or "A"

<220>
<221> SITE
<222> (1)..(4)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 230
Gln Met Gly Tyr

1

<210> 231
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="Consensus VL CDR2"

<220>
<221> VARIANT
<222> (3)..(3)
<223> /replace="S"

<220>
<221> SITE
<222> (1)..(7)
<223> /note="Variant residues given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 231
Glu Val Asn Lys Arg Pro Ser
1 5

<210> 232
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
<221> source
<223> /note="Consensus VL CDR3"

<220>
<221> VARIANT
<222> (6)..(6)
<223> /replace="S"

<220>
<221> SITE
<222> (1)..(11)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 232
Ser Ser Tyr Ala Gly Asn Asn Asn Phe Gly Val
1 5 10

<210> 233
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="BK0-4A8 VH"

<400> 233
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg 60
tcttgtgccg ccagcggctt caccttcagc agcagcacia tgagctgggt ccgacaggcc 120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggaa cacctactac 180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac 240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagatg 300
ggctactggg gccaggcat tctcgtgaca gtgtcctca 339

<210> 234

<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 1"

<400> 234
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg 60
tcttgtgccg ccagcggcctt caccttcagc agcagcacac agagctgggt ccgacaggcc 120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac 180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac 240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagatg 300
ggctactggg gccagggcat tctcgtgaca gtgtcctca 339

<210> 235
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 2"

<400> 235

gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg	60
tcttgtgccg ccagcggctt caccttcagc agcagcacac agagctgggt ccgacagcct	120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac	180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac	240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagatg	300
ggctactggg gccagggcat tctcgtgaca gtgtcctca	339

<210> 236

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>

<221> source

<223> /note="Completely synthesized"

<220>

<221> source

<223> /note="4A8 VH Variant 3"

<400> 236

gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg	60
tcttgtgccg ccagcggctt caccttcagc agcagcacac agagctgggt ccgacagcct	120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac	180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcaaaaa caccctgtac	240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagatg	300
ggctactggg gccagggcat tctcgtgaca gtgtcctca	339

<210> 237

<211> 339

<212> DNA

<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 4"

<400> 237
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg 60
tcttgtgccg ccagcggcctt caccttcagc agcagcacac agagctgggt ccgacagcct 120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac 180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac 240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagaag 300
ggctactggg gccagggcat tctcgtgaca gtgtcctca 339

<210> 238
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 5"

<400> 238
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg 60
tcttgtgccg ccagcggcctt caccttcagc agcagcacac agagctgggt ccgacagcct 120

cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac	180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcaaaaa caccctgtac	240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagaag	300
ggctactggg gccagggcat tctcgtgaca gtgtcctca	339

<210> 239
 <211> 339
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
 <221> source
 <223> /note="Completely synthesized"

<220>
 <221> source
 <223> /note="4A8 VH Variant 6"

<400> 239	
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg	60
tcttgtgccg ccagcggctt caccttcagc agcagcacac agagctgggt ccgacagcct	120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac	180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcaaaaa caccctgtac	240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc caagcagaag	300
ggctactggg gccagggcat tctcgtgaca gtgtcctca	339

<210> 240
 <211> 339
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 7"

<400> 240
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg 60
tcttgtgccg ccagcggctt caccttcagc agcagcacac agagctgggt ccgacagcct 120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac 180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac 240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc caagcagaag 300
ggctactggg gccagggcat tctcgtgaca gtgtcctca 339

<210> 241
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 8"

<400> 241
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg 60
tcttgtgccg ccagcggctt caccttcagc agcagcacac agagctgggt ccgacaggcc 120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac 180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac 240

ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagaag	300
ggctactggg gccagggcat tctcgtgaca gtgtcctca	339

<210> 242
 <211> 339
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
 <221> source
 <223> /note="Completely synthesized"

<220>
 <221> source
 <223> /note="4A8 VH Variant 9"

<400> 242	
gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg	60
tcttgtgccg ccagcggctt caccttcagc agcagcacac agagctgggt ccgacaggcc	120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggag tacctactac	180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcaaaaa caccctgtac	240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc catccagaag	300
ggctactggg gccagggcat tctcgtgaca gtgtcctca	339

<210> 243
 <211> 339
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
 <221> source
 <223> /note="Completely synthesized"

<220>

<221> source

<223> /note="4A8 VH Variant 10"

<400> 243

gaagtgcagc tgctggaatc tggcggagga ctggtgcagc ctggcggcag cctgagactg	60
tcttgtgccg ccagcggctt caccttcagc agcagcacia tgagctgggt ccgacaggcc	120
cctggcaagg gactggaatg ggtgtccgcc atcagcggca gaggccggaa cacctactac	180
gccgacagcg tgaagggccg gttcaccatc agccgggaca acagcagaaa caccctgtac	240
ctgcagatga acagcctgcg ggccgaggac accgccgtgt actactgtgc caagcagaag	300
ggctactggg gccaggcat tctcgtgaca gtgtcctca	339

<210> 244

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>

<221> source

<223> /note="Completely synthesized"

<220>

<221> source

<223> /note="4A8 VH Variant 101"

<400> 244

gaagttcagc tgcttgaatc tggcggagga ctggttcagc ctggcggatc tctgagactg	60
tcttgtgccg ccagcggctt cacctttagc agcagcacac agagctgggt ccgacagcct	120
cctggcaaag gactggaatg ggtgtccgcc atctctggca gaggcagaag cacctactac	180
gccgactctg tgaagggcag attcaccatc agccgggaca acagcaagaa caccctgtac	240
ctgcagatga acagcctgag agccgaggac accgccgtgt actattgtgc catccaggcc	300
ggctattggg gccagggaat actcgtgaca gtgtcctca	339

<210> 245
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 103"

<400> 245
gaagttcagc tgcttgaatc tggcggagga ctggttcagc ctggcggatc tctgagactg 60
tcttgtgccg ccagcggctt cacctttagc agcagcacac agagctgggt ccgacagcct 120
cctggcaaag gactggaatg ggtgtccgcc atctctggca gcggcggcag cacatattac 180
gccgattctg tgaagggcag attcaccatc agccgggaca acagcaagaa caccctgtac 240
ctgcagatga acagcctgag agccgaggac accgccgtgt actattgcgc catccagatg 300
ggctattggg gccagggaat cctcgtgaca gtgtcctca 339

<210> 246
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 104"

<400> 246
gaagttcagc tgcttgaatc tggcggagga ctggttcagc ctggcggatc tctgagactg 60
tcttgtgccg ccagcggcctt cacctttagc agcagcacac agagctgggt ccgacagcct 120
cctggcaaag gactggaatg ggtgtccgcc atctctggca gcggcggcag cacatattac 180
gccgattctg tgaagggcag attcaccatc agccgggaca acagcaagaa caccctgtac 240
ctgcagatga acagcctgag agccgaggac accgccgtgt actattgcgc catccagaaa 300
ggctattggg gccagggcat cctcgtgaca gtgtcctca 339

<210> 247
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VH Variant 105"

<400> 247
gaagttcagc tgcttgaatc tggcggagga ctggttcagc ctggcggatc tctgagactg 60
tcttgtgccg ccagcggcctt cacctttagc agcagcacac agagctgggt ccgacagcct 120
cctggcaaag gactggaatg ggtgtccgcc atctctggca gcggcggcag cacatattac 180
gccgattctg tgaagggcag attcaccatc agccgggaca acagcaagaa caccctgtac 240
ctgcagatga acagcctgag agccgaggac accgccgtgt actattgtgc catccaggcc 300
ggctattggg gccagggcat actcgtgaca gtgtcctca 339

<210> 248
<211> 987
<212> DNA

<213> Homo sapiens

<220>

<221> source

<223> /note="Human IgG1"

<400> 248

gctagcacca agggacccag cgtgttcccc ctggcccca gcagcaagag cacatctggc	60
ggaacagccg ccctgggctg cctgggtgaaa gactacttcc ccgagcccgt gaccgtgagc	120
tggaacagcg gagccctgac cagcggcgtg cacacctttc cagccgtgct gcagagcagc	180
ggcctgtaca gcctgagcag cgtgggtgaca gtgccctcta gcagcctggg caccagacc	240
tacatctgca acgtgaacca caagcccagc aacaccaagg tggacaaaaa ggtggaaccc	300
aagagctgcg acaagaccca cacctgtccc ccctgccctg cccctgaact gctgggcgga	360
ccctccgtgt tcctgttccc cccaaagccc aaggacaccc tgatgatcag ccggaccccc	420
gaagtgacct gcgtgggtgt ggacgtgtcc cacgaggacc ctgaagtga gttcaattgg	480
tacgtggacg gcgtggaagt gcacaacgcc aagaccaagc ccagagagga acagtacaac	540
agcacctacc ggggtggtgtc cgtgctgacc gtgctgcacc aggactggct gaacggcaaa	600
gagtacaagt gcaagggtgtc caacaaggcc ctgcctgctc ccatcgagaa aaccatcagc	660
aaggccaagg gccagccccg cgagcctcag gtgtacacac tgccccccag ccgggacgag	720
ctgaccaaga accagggtgtc cctgacctgt ctggtgaaa gcttctaccc cagcgatatc	780
gccgtggaat gggagagcaa cggccagccc gagaacaact acaagaccac cccccctgtg	840
ctggacagcg acggctcatt cttcctgtac agcaagctga ccgtggacaa gagccggtgg	900
cagcagggca acgtgttcag ctgcagcgtg atgcacgagg ccctgcacaa ccactacacc	960
cagaagtccc tgagcctgag ccccggc	987

<210> 249

<211> 987

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic

polynucleotide"

<220>

<221> source

<223> /note="Completely synthesized"

<220>

<221> source

<223> /note="Human IgG1"

<400> 249

gctagcacca agggacccag cgtgttcccc ctggcccca gcagcaagag cacatctggc	60
ggaacagccg ccctgggctg cctggtgaaa gactacttcc ccgagcccgt gaccgtgagc	120
tggaacagcg gagccctgac cagcggcgtg cacacctttc cagccgtgct gcagagcagc	180
ggcctgtaca gcctgagcag cgtggtgaca gtgccctcta gcagcctggg caccagacc	240
tacatctgca acgtgaacca caagcccagc aacaccaagg tggacaaaaa ggtggaaccc	300
aagagctgcg acaagacca cacctgtccc ccctgccctg cccctgaact ggctggcgct	360
ccctccgtgt tcctgttccc cccaaagccc aaggacaccc tgatgatcag ccggaccccc	420
gaagtgacct gcgtgggtgt ggacgtgtcc cacgaggacc ctgaagtga gttcaattgg	480
tacgtggacg gcgtggaagt gcacaacgcc aagaccaagc ccagagagga acagtacaac	540
agcacctacc ggggtggtgtc cgtgctgacc gtgctgcacc aggactggct gaacggcaaa	600
gagtacaagt gcaaggtgtc caacaaggcc ctgcctgtc ccatcgagaa aaccatcagc	660
aaggccaagg gccagccccg cgagcctcag gtgtacacac tgccccccag ccgggacgag	720
ctgaccaaga accaggtgtc cctgacctgt ctggtgaaag gcttctaccc cagcgatatc	780
gccgtggaat gggagagcaa cggccagccc gagaacaact acaagaccac cccccctgtg	840
ctggacagcg acggctcatt cttcctgtac agcaagctga ccgtggacaa gagccggtgg	900
cagcagggca acgtgttcag ctgcagcgtg atgcacgagg ccctgcacaa ccactacacc	960
cagaagtccc tgagcctgag ccccggc	987

<210> 250

<211> 978

<212> DNA

<213> Homo sapiens

<220>
<221> source
<223> /note="Human IgG4"

<400> 250
gctagcacca agggcccccag cgtgttcccc ctggcccctt gtagcagaag caccagcgag 60
agcacagccg ccctgggctg cctggtgaaa gactacttcc ccgagcccgt caccgtgtcc 120
tggaacagcg gagccctgac cagcggcgtg cacacctttc cagccgtgct gcagagcagc 180
ggcctgtaca gcctgagcag cgtggtgaca gtgccctcca gcagcctggg caccaagacc 240
tacacctgta acgtggacca caagcccagc aacaccaagg tggacaagcg ggtggaatct 300
aagtacggcc caccctgccc cccctgccct gcccctgaat ttctgggcgg accctccgtg 360
ttcctgttcc ccccaaagcc caaggacacc ctgatgatca gccggacccc cgaagtgacc 420
tgcgtggtgg tggacgtgtc ccaggaagat cccgaggctc agttcaattg gtacgtggac 480
ggcgtggaag tgcacaacgc caagaccaag cccagagagg aacagttcaa cagcacctac 540
cgggtggtgt ccgtgctgac cgtgctgcac caggactggc tgaacggcaa agagtacaag 600
tgcaaagtct ccaacaaggg cctgcccagc tccatcgaga aaaccatcag caaggccaag 660
ggccagcccc gcgagcctca ggtgtacaca ctgccccca gccaggaaga gatgaccaag 720
aaccagggtg ccctgacctg tctggtgaaa ggcttctacc ccagcgatat cgccgtggaa 780
tgggagagca acggccagcc cgagaacaac tacaagacca cccccctgt gctggacagc 840
gacggcagct tcttctgtga ctcccggctg accgtggaca agagccggtg gcaggaaggc 900
aacgtcttca gctgcagcgt gatgcacgag gccctgcaca accactacac ccagaagtcc 960
ctgagcctga gcctgggc 978

<210> 251
<211> 978
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="Human IgG4"

<400> 251
gctagcacca agggcccccag cgtgttcccc ctggcccctt gtagcagaag caccagcgag 60
agcacagccg ccctgggctg cctggtgaaa gactacttcc ccgagcccgt caccgtgtcc 120
tggaacagcg gagccctgac cagcggcgtg cacaccttcc cagccgtgct gcagagcagc 180
ggcctgtaca gcctgagcag cgtggtgaca gtgccctcca gcagcctggg caccaagacc 240
tacacctgta acgtggacca caagcccagc aacaccaagg tggacaagcg ggtggaatct 300
aagtacggcc caccctgccc cccctgccct gccctgaat ttctgggcgg accctccgtg 360
ttcctgttcc ccccaaagcc caaggacacc ctgtatatca ctcgggagcc cgaagtgacc 420
tgcgtggtgg tggacgtgtc ccaggaagat cccgaggtcc agttcaattg gtacgtggac 480
ggcgtggaag tgcacaacgc caagaccaag cccagagagg aacagttcaa cagcacctac 540
cgggtggtgt ccgtgctgac cgtgctgcac caggactggc tgaacggcaa agagtacaag 600
tgcaaagtct ccaacaaggg cctgcccagc tccatcgaga aaaccatcag caaggccaag 660
ggccagcccc gcgagcctca ggtgtacaca ctgcccccca gccaggaaga gatgaccaag 720
aaccaggtgt ccctgacctg tctggtgaaa ggcttctacc ccagcgatat cgccgtggaa 780
tgggagagca acggccagcc cgagaacaac tacaagacca cccccctgt gctggacagc 840
gacggcagct tcttcctgta ctcccggctg accgtggaca agagccggtg gcaggaaggc 900
aacgtcttca gctgcagcgt gatgcacgag gccctgcaca accactacac ccagaagtcc 960
ctgagcctga gcctgggc 978

<210> 252
<211> 975
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="Human IgG2"

<400> 252
gctagcacca agggccccag cgtgttcct ctggcccctt gtagcagaag caccagcgag 60
tctacagccg ccctgggctg cctcgtgaag gactactttc ccgagcccgt caccgtgtcc 120
tggaactctg gcgctctgac aagcggcgtg cacacctttc cagccgtgct gcagagcagc 180
ggcctgtact ctctgagcag cgtcgtgacc gtgcccagca gcaatttcgg caccagacc 240
tacacctgta acgtggacca caagcccagc aacaccaagg tggacaagac cgtggaacgg 300
aagtgtgctg tggaatgccc cccttgtcct gcccctccag tggctggccc ttccgtgttc 360
ctgttcccc caaagcccaa ggacaccctg atgatcagcc ggacccccga agtgacctgc 420
gtggtggtgg atgtgtccca cgaggacccc gaggtgcagt tcaattggta cgtggacggc 480
gtggaagtgc acaacgccaa gaccaagccc agagaggaac agttcaacag caccttccgg 540
gtggtgtccg tgctgaccgt ggtgcatcag gactggctga acggcaaaga gtacaagtgc 600
aaggtgtcca acaagggcct gccagctcc atcgagaaaa ccatcagcaa gaccaaaggc 660
cagccccgag agccccaggt gtacacactg cctccaagcc gggaagagat gaccaagaat 720
caggtgtccc tgacctgtct cgtgaaaggc ttctaccctt ccgatatcgc cgtggaatgg 780
gagagcaacg gccagcccga gaacaactac aagaccaccc ccccatgct ggacagcgac 840
ggctcattct tcctgtacag caagctgaca gtggacaagt cccggtggca gcagggaac 900
gtgttcagct gcagcgtgat gcacgaggcc ctgcacaacc actacacca gaagtccctg 960
agcctgagcc ctggc 975

<210> 253

<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="BK0-4A8 VL"

<400> 253
cagtctgctc tgacacagcc tcctagcgcc tctggctctc ctggccagag cgtgaccatc 60
agctgtatcg gcaccagcag cgacgtgggc ggctacaact acgtgtcctg gtatcagcag 120
caccgacaca aggcccccaa gctgatgatc tacgaagtga acaagcggcc cagcggcgtg 180
cccgatagat tcagcggcag caagagcggc aacaccgcca gcctcacagt gtctggactg 240
caggccgagg acgaggccga ctactactgt agcagctacg ccggcaacaa caacttcggc 300
gtgttcggcg gaggcaccaa gctgacagtc cta 333

<210> 254
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
<221> source
<223> /note="Completely synthesized"

<220>
<221> source
<223> /note="4A8 VL variant b"

<400> 254

cagtctgctc tgacacagcc tcctagcgcc tctggctctc ctggccagag cgtgaccatc	60
agctgtatcg gcaccagcag cgacgtgggc ggctacaact acgtgtcctg gtatcagcag	120
caccccgaca aggcccccaa gctgatgata tacgaagtgt ccaagcggcc cagcggcgtg	180
cccgatagat tcagcggcag caagagcggc aacaccgcca gcctcacagt gtctggactg	240
caggccgagg acgaggccga ctactactgt agcagctacg ccggcagcaa caacttcggc	300
gtgttcggcg gaggcaccaa gctgacagtc cta	333

<210> 255

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>

<221> source

<223> /note="Completely synthesized"

<220>

<221> source

<223> /note="4A8 VL variant c"

<400> 255

cagtctgctc tgacacagcc tcctagcgcc tctggctctc ctggccagag cgtgaccatc	60
agctgtatcg gcaccagcag cgacgtgggc ggctacaact acgtgtcctg gtatcagcag	120
caccccggtg aggcccccaa gctgatgata tacgaagtgt ccaagcggcc cagcggcgtg	180
cccgatagat tcagcggcag caagagcggc aacaccgcca gcctcacagt gtctggactg	240
caggccgagg acgaggccga ctactactgt agcagctacg ccggcagcaa caacttcggc	300
gtgttcggcg gaggcaccaa gctgacagtc cta	333

<210> 256

<211> 318

<212> DNA

<213> Homo sapiens

<220>

<221> source

<223> /note="lambda constant light chain"

<400> 256

ggtcagccca aggccgctcc cagcgtgacc ctgttcccc caagcagcga ggaactgcag 60

gccaacaagg ccaccctggt gtgcctgata agcgacttct accctggggc cgtgaccgtg 120

gcctggaagg ccgatagcag ccctgtgaag gccggcgtgg aaaccaccac cccctccaag 180

cagagcaaca acaaatacgc cgccagcagc tacctgtccc tgacccccga gcagtggaag 240

tcccaccggt cctacagctg ccaggtgaca cacgagggca gcaccgtgga aaagaccgtg 300

gccccaccg agtgcagc 318