

1
SEQUENCE LISTING

<110> Numab Therapeutics AG

<120> ANTIBODY VARIABLE DOMAINS AND ANTIBODIES HAVING DECREASED IMMUNOGENICITY

<130> 118160P877PC

<140> PCT/EP2021/087618
<141> 2021-12-23

<150> EP20216957.9
<151> 2020-12-23

<150> EP21154786.4
<151> 2021-02-02

<150> PCT/EP2021/064427
<151> 2021-05-28

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<170> PatentIn version 3.5

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
 100 105 110

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
 100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser

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<400> 3

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
 100 105 110

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

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
100 105 110

Gly Gln Gly Thr Gln Val Thr Val Ser Ser
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<400> 5

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

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

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr

5

35

40

45

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

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

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

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
100 105 110 6

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

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<400> 7

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
100 105 110

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

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

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

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
100 105 110

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

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<400> 9

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ala Asn
20 25 30 8

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

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

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

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

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
100 105 110

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

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<400> 10

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

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

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

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

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

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

Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
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<400> 11

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

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
50 55 60

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
100 105 110

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

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<400> 12

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

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
 50 55 60

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
 100 105 110

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

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<400> 13

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

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
 50 55 60

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
 100 105 110

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

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<400> 14

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

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
 50 55 60

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
 100 105 110

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

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<400> 15

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

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Asn Phe Tyr Ser Asp Ser

85 13 95
90

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
100 105 110

Leu Gly

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<400> 16

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Cys Gly Thr Lys Val Thr Val
100 105 110

Leu Gly

<210> 17
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<400> 17

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

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
 50 55 60

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
 100 105 110

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

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<400> 18

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

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

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<400> 19

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
50 55 60 16

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
100 105 110

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

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<400> 20

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

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

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

Ile Ala Ser Ile Tyr Gly Gly Ser Ser Gly Asn Thr Gln Tyr Ala Ser
50 55 60

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

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

Phe Cys Ala Arg Gly Tyr Val Asp Tyr Gly Gly Ala Thr Asp Leu Trp
 100 105 110

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

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<400> 21

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 100 105 110

Leu Gly

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<400> 22

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Cys Gly Thr Lys Val Thr Val
 100 105 110

Leu Gly

<210> 23

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<400> 23

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

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

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<400> 24

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

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

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<400> 25

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

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

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly

21

100

105

110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

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<400> 26

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

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

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

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<400> 27

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

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

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

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

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

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

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

<210> 28

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<400> 28

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

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

Gln Leu Ser Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu

35 40 23 45

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

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

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

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

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<400> 29

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

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

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

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

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

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

24

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<400> 30

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

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

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 31

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

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

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 32

<211> 121

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 32

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn
20 25 30 26

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

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

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

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

Arg Asp Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 33
<211> 110
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 33

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

Arg Val Thr Ile Thr Cys Arg Ser Ser Glu Ser Val Tyr Ser Asn Asn
20 25 30

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

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

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

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

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

<210> 34

<211> 111

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 34

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

Arg Val Thr Ile Thr Cys Arg Ser Ser Glu Ser Val Tyr Ser Asn Asn
20 25 30

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

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

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

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

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

<210> 35

<211> 120

<212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 35

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

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

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

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

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

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

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

Gly Thr Gln Val Thr Val Ser Ser
 115 120

<210> 36
 <211> 120
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 36

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

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

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

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

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

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

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

Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 37

 $\langle 211 \rangle$ 120

<212> PRT

<213> Artificial sequence

 $\langle 220 \rangle$

<223> artificial antibody-based sequence

<400> 37

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

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

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

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

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

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

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

Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 38

<211> 110

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 38

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

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

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

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

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

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

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

31

100

105

110

<210> 39
<211> 109
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 39

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

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

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

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

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

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

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

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

<220>
<223> artificial antibody-based sequence

<400> 40

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

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

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

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

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

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

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

<210> 41

<211> 109

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 41

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

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

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro

<210> 43
 <211> 120
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 43

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

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

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

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

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

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

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

Gly Thr Gln Val Thr Val Ser Ser
 115 120

<210> 44
 <211> 120
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 44

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

Ile Tyr Asp Ala Ser Asp Leu Thr Ser Gly Val Pro Ser Arg Phe Ser
50 55 60 36

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

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

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

<210> 46
<211> 109
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 46

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

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

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

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

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

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

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

<210> 47
 <211> 109
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 47

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

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

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

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

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

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

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

<210> 48
 <211> 109
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 48

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Ser Ile Asn Ser Arg
20 25 38 30

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

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

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

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

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

<210> 49
<211> 759
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 49

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
100 105 110

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

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
165 170 175

Asp Ile Thr Tyr Asp Ala Asn Trp Thr Lys Gly Arg Phe Thr Ile Ser
180 185 190

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

Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser
225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
275 280 285

40

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Gly Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
 435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln

500

505

510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
 740 745 750

Thr Leu Val Thr Val Ser Ser
 755

<210> 50

<211> 759

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 50

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 100 105 110

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

115

120

125

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
 145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Gln Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Gly Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
 435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
 500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
 740 745 750

Thr Gln Val Thr Val Ser Ser
755

<210> 51
<211> 759
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 51

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
100 105 110

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

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Gln Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

48

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
405 410 415

Pro Gly Lys Gly Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala

580

585

590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
 740 745 750

Thr Leu Val Thr Val Ser Ser
 755

<210> 52

<211> 759

<212> PRT

<213> Artificial sequence

<220>

50

<223> artificial antibody-based sequence

<400> 52

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
100 105 110

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

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
165 170 175

Asp Ile Thr Tyr Asp Ala Gln Trp Thr Lys Gly Arg Phe Thr Ile Ser
180 185 190

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

195

200

205

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Gly Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
 435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
 500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
740 745 750

Thr Leu Val Thr Val Ser Ser
755

<210> 53

<211> 759

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 53

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 100 105 110

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

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
 145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Gln Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
370 375 380

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
405 410 415

Pro Gly Lys Gly Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 56 460

Ala Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
 500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
 645 650 655

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

57

660

665

670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
740 745 750

Thr Gln Val Thr Val Ser Ser
755

<210> 54

<211> 759

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 54

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Cys Gly Thr Lys Val Thr Val
 100 105 110

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

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
 145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Gln Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser

275

280

285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Cys Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
 435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
740 745 750

Thr Gln Val Thr Val Ser Ser
755

<210> 55

<211> 759

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 55

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Cys Gly Thr Lys Val Thr Val
100 105 110

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

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
 145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Gln Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
405 410 415

Pro Gly Lys Cys Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
515 520 525

64

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Cys Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly

740 745 65 750

Thr Gln Val Thr Val Ser Ser
755

<210> 56
<211> 759
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 56

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Cys Gly Thr Lys Val Thr Val
100 105 110

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

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
130 135 140

66

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
 145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Asn Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val

355

360

365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Cys Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
 435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
 500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
 740 745 750

Thr Gln Val Thr Val Ser Ser
 755

<210> 57

<211> 759

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 57

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Cys Gly Thr Lys Val Thr Val
100 105 110

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

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
165 170 175

Asp Ile Thr Tyr Asp Ala Asn Trp Thr Lys Gly Arg Phe Thr Ile Ser
180 185 190

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

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Cys Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser
 435 440 445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
 500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Cys Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620 72

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
 740 745 750

Thr Gln Val Thr Val Ser Ser
 755

<210> 58
 <211> 759
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 58

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

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

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

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

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

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

Thr Thr Ile Gly Pro Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 100 105 110

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

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 130 135 140

Gly Phe Ser Phe Ser Ala Asn Tyr Tyr Pro Cys Trp Val Arg Gln Ala
 145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Ile Gly Cys Ile Tyr Gly Gly Ser Ser
 165 170 175

Asp Ile Thr Tyr Asp Ala Asn Trp Thr Lys Gly Arg Phe Thr Ile Ser
 180 185 190

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

Ala Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Ala Trp Tyr Ser
 210 215 220

74

Gly Trp Gly Gly Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 225 230 235 240

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 245 250 255

Gly Gly Gly Gly Ser Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 260 265 270

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser
 275 280 285

Ile Ser Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 290 295 300

Lys Leu Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser
 305 310 315 320

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 325 330 335

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Tyr
 340 345 350

Tyr Gly Asn Asp Gly Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val
 355 360 365

Leu Gly Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly
 370 375 380

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 385 390 395 400

Gly Phe Ser Phe Asn Ser Asp Tyr Trp Ile Tyr Trp Val Arg Gln Ala
 405 410 415

Pro Gly Lys Gly Leu Glu Trp Ile Ala Ser Ile Tyr Gly Gly Ser Ser
 420 425 430

Gly Asn Thr Gln Tyr Ala Ser Trp Ala Gln Gly Arg Phe Thr Ile Ser

75

435

440

445

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 450 455 460

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Tyr Val Asp Tyr
 465 470 475 480

Gly Gly Ala Thr Asp Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 485 490 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Gln Met Thr Gln
 500 505 510

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
 515 520 525

Cys Gln Ser Ser Glu Ser Val Tyr Ser Asn Asn Gln Leu Ser Trp Tyr
 530 535 540

Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser
 545 550 555 560

Asp Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 565 570 575

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 580 585 590

Thr Tyr Tyr Cys Ala Gly Gly Phe Ser Ser Ser Ser Asp Thr Ala Phe
 595 600 605

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 625 630 635 640

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
 645 650 655

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Asn Ala Met
 660 665 670

Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Ile Gly Ile
 675 680 685

Ile Ser Val Gly Gly Phe Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg
 690 695 700

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 705 710 715 720

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp
 725 730 735

Arg His Gly Gly Asp Ser Ser Gly Ala Phe Tyr Leu Trp Gly Gln Gly
 740 745 750

Thr Gln Val Thr Val Ser Ser
 755

<210> 59
 <211> 124
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 59

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

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

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

Ile Val Cys Ile Tyr Ile Gly Ser Arg Ala Asp Thr Tyr Tyr Ala Pro

50 55 77 60
 Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn Ser Lys Asn Thr
 65 70 75 80
 Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
 85 90 95
 Phe Cys Ala Arg Phe Ser Ser Gly Ile Tyr Asp Leu Asp Arg Phe Phe
 100 105 110
 Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120
 <210> 60
 <211> 124
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> artificial antibody-based sequence
 <400> 60
 Gln Ser Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ala Asn
 20 25 30
 Tyr Trp Ile Cys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 35 40 45
 Ile Val Cys Ile Tyr Ile Gly Ser Arg Ala Asp Thr Tyr Tyr Ala Pro
 50 55 60
 Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn Ser Lys Asn Thr
 65 70 75 80
 Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr
 85 90 95

78

Phe Cys Ala Arg Phe Ser Ser Gly Ile Tyr Asp Leu Asp Arg Phe Phe
100 105 110

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

<210> 61

<211> 111

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 61

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

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

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

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

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

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

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

<210> 62

<211> 128

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 62

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

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

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

Ile Gly Cys Ile Tyr Ala Gly Ser Arg Gly Ser Thr Tyr Tyr Ala Ser
 50 55 60

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

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

Cys Ala Arg Ala Ala Phe Val Asn Arg Gly Val Ser Trp Ile Trp Pro
 100 105 110

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

<210> 63

<211> 128

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 63

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

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

His Tyr Met Cys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
35 40 80 45

Ile Gly Cys Ile Tyr Ala Gly Ser Arg Gly Ser Thr Tyr Tyr Ala Ser
50 55 60

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

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

Cys Ala Arg Ala Ala Phe Val Asn Arg Gly Val Ser Trp Ile Trp Pro
100 105 110

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

<210> 64

<211> 110

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 64

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

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

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

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

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

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

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

<210> 65

<211> 216

<212> PRT

<213> Artificial sequence

 $\langle 220 \rangle$

<223> artificial antibody-based sequence

<400> 65

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

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

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

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

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

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

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

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

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

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

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

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

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

Lys Ser Phe Asn Arg Gly Glu Cys
 210 215

<210> 66

<211> 720

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 66

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

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

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

Ile Gly Cys Ile Tyr Ala Gly Ser Arg Gly Ser Thr Tyr Tyr Ala Ser
 50 55 60

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

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

85																90																83																95															
Tyr	Cys	Ala	Arg	Ala	Ala	Phe	Val	Asn	Arg	Gly	Val	Ser	Trp	Ile	Trp																																																
			100																	105																	110																										
Pro	Tyr	Tyr	Phe	Ser	Leu	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser																																																
			115																	120																	125																										
Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser																																																
			130																	135																	140																										
Arg	Ser	Thr	Ser	Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp																																																
			145																	150																	155																										
Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr																																																
							165																	170																	175																						
Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr																																																
							180																	185																	190																						
Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Lys																																																
							195																	200																	205																						
Thr	Tyr	Thr	Cys	Asn	Val	Asp	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp																																																
							210																	215																	220																						
Lys	Arg	Val	Glu	Ser	Lys	Tyr	Gly	Pro	Pro	Cys	Pro	Pro	Cys	Pro	Ala																																																
							225																	230																	235																						
Pro	Glu	Phe	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro																																																
							245																	250																	255																						
Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val																																																
							260																	265																	270																						
Val	Asp	Val	Ser	Gln	Glu	Asp	Pro	Glu	Val	Gln	Phe	Asn	Trp	Tyr	Val																																																
							275																	280																	285																						
Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln																																																
							290																	295																	300																						

Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
 305 310 315 320

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly
 325 330 335

Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
 340 345 350

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr
 355 360 365

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
 370 375 380

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
 385 390 395 400

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

Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe
 420 425 430

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
 435 440 445

Ser Leu Ser Leu Ser Leu Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly
 450 455 460

Ser Ala Phe Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 465 470 475 480

Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser Ile Asp Ser
 485 490 495

Trp Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Lys Leu Leu
 500 505 510

Ile Tyr Gln Ala Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
 515 520 525

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
 530 535 540

Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Thr Tyr Tyr Gly Gly Gly
 545 550 555 560

His Ile Gly Trp Gly Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
 565 570 575

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 580 585 590

Gly Gly Gly Ser Gln Ser Gln Leu Val Glu Ser Gly Gly Gly Arg Val
 595 600 605

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser
 610 615 620

Phe Ser Ala Asn Tyr Trp Ile Cys Trp Val Arg Gln Ala Pro Gly Lys
 625 630 635 640

Gly Leu Glu Trp Ile Val Cys Ile Tyr Ile Gly Ser Arg Ala Asp Thr
 645 650 655

Tyr Tyr Ala Pro Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn
 660 665 670

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
 675 680 685

Thr Ala Thr Tyr Phe Cys Ala Arg Phe Ser Ser Gly Ile Tyr Asp Leu
 690 695 700

Asp Arg Phe Phe Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
 705 710 715 720

<210> 67
 <211> 216
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 67

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

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

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

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

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

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

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

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

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

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

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

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

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

Lys Ser Phe Asn Arg Gly Glu Cys
 210 215

<210> 68

<211> 719

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 68

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

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

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

Ile Gly Cys Ile Tyr Ala Gly Ser Arg Gly Ser Thr Tyr Tyr Ala Ser
 50 55 60

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

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

Cys Ala Arg Ala Ala Phe Val Asn Arg Gly Val Ser Trp Ile Trp Pro
 100 105 110

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

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 130 135 140

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

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

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
 180 185 190

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
 195 200 205

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
 210 215 220

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
 225 230 235 240

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
 245 250 255

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
 260 265 270

Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
 275 280 285

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
 290 295 300

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
 305 310 315 320

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
 325 330 335

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

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
 355 360 365

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
 370 375 380

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
 385 390 395 400

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

Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
 420 425 430

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
 435 440 445

Leu Ser Leu Ser Leu Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 450 455 460

Ala Phe Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 465 470 475 480

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser Ile Asp Ser Trp
 485 490 495

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Lys Leu Leu Ile
 500 505 510

Tyr Gln Ala Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
 515 520 525

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
 530 535 540

90

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Thr Tyr Tyr Gly Gly Gly His
545 550 555 560

Ile Gly Trp Gly Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly
565 570 575

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
580 585 590

Gly Gly Ser Gln Ser Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln
595 600 605

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe
610 615 620

Ser Ala Asn Tyr Trp Ile Cys Trp Val Arg Gln Ala Pro Gly Lys Gly
625 630 635 640

Leu Glu Trp Ile Val Cys Ile Tyr Ile Gly Ser Arg Ala Asp Thr Tyr
645 650 655

Tyr Ala Pro Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn Ser
660 665 670

Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
675 680 685

Ala Thr Tyr Phe Cys Ala Arg Phe Ser Ser Gly Ile Tyr Asp Leu Asp
690 695 700

Arg Phe Phe Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
705 710 715

<210> 69

<211> 122

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 69

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

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

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

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

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

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

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

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

<210> 70

<211> 122

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 70

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

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

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

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

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

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

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

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

<210> 71

<211> 122

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 71

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

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

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

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

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

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

85 90 93 95

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

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

<210> 72
<211> 122
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 72

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

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

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

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

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

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

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

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

<210> 73
 <211> 111
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 73

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

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

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

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

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

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

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

<210> 74
 <211> 111
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 74

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

Asp Arg Val Thr Ile Lys Cys Gln Ala Ser Gln Ser Ile Ser Asn Tyr

Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
85 90 95 96

Tyr Cys Ala Arg Asp Met Gly Phe Ala Asp Tyr Ala Leu Asn Leu Trp
100 105 110

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

<210> 76
<211> 122
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 76

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

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

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

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

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

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

Tyr Cys Ala Arg Asp Met Gly Phe Ala Asp Tyr Ala Leu Asn Leu Trp
100 105 110

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

<210> 77
 <211> 122
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 77

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

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

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

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

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

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

Tyr Cys Ala Arg Asp Met Gly Phe Ala Asp Tyr Ala Leu Asn Leu Trp
 100 105 110

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

<210> 78
 <211> 112
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 78

98
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

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

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

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

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

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

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

<210> 79
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 79

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

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

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

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

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

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

Thr His Arg Asn Ser Phe Gly Cys Gly Thr Lys Val Thr Val Leu Gly
100 105 110

<210> 80

<211> 119

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 80

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

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

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

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

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

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

Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 81
 <211> 119
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 81

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

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

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

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

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

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

Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp Gly Gln Gly
 100 105 110

Thr Gln Val Thr Val Ser Ser
 115

<210> 82
 <211> 114
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 82

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

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

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

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

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

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

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

Leu Gly

<210> 83

<211> 516

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 83

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 115 120 125

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

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

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

Gly Leu Glu Trp Ile Gly Cys Thr Asn Thr Ala Ser Ser Val Arg Thr
 180 185 190

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

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

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Met Gly Phe Ala Asp Tyr Ala
 225 230 235 240

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

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

Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
 275 280 285

Ser Gly Phe Ser Leu Ser Ser Tyr Asp Met Ser Trp Val Arg Gln Ala
 290 295 300

Pro Gly Lys Gly Leu Ala Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro
 305 310 315 320

Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp
 325 330 335

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

Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser
 355 360 365

His Ser Asn Ile Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
 370 375 380

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 385 390 395 400

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu
 405 410 415

Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala Met Asn Trp
 420 425 430

Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Trp Ile Gly His Ile Asn
 435 440 445

Ala Gly Asp Ile Ala Tyr Tyr Ala Thr Trp Ala Lys Gly Arg Phe Thr
 450 455 460

104

Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser
465 470 475 480

Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg Gly Ala Gly
485 490 495

Gly Phe Ser Thr Gly Pro Phe Lys Leu Trp Gly Gln Gly Thr Leu Val
500 505 510

Thr Val Ser Ser
515

<210> 84
<211> 493
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 84

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 115 120 125

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

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

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

Gly Leu Glu Trp Ile Gly Cys Thr Asn Thr Ala Ser Ser Val Arg Thr
 180 185 190

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

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

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Met Gly Phe Ala Asp Tyr Ala
 225 230 235 240

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

Gly Gly Ser Gly Gly Gly Gly Ser Ala Phe Glu Leu Thr Gln Ser Pro
 260 265 270

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln
 275 280 285

Ala Ser Glu Ser Ile Asn Ser Arg Leu Ala Trp Tyr Gln Gln Lys Pro
 290 295 300

Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asp Leu Thr Ser
 305 310 315 320

106
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
325 330 335

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
340 345 350

Gln Gly Tyr Gly Gly Ser Ser Thr Thr Thr Phe Gly Cys Gly Thr Lys
355 360 365

Leu Thr Val Leu Gly Gly Gly Ser Gly Gly Ser Asp Ile Gln Met Thr
370 375 380

Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile
385 390 395 400

Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu Ala Trp
405 410 415

Phe Gln Gln Lys Pro Gly Gln Ser Pro Lys Arg Leu Ile Tyr Ser Ala
420 425 430

Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
435 440 445

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
450 455 460

Ala Thr Tyr Tyr Cys Leu Gly Ser Tyr Ala Cys Ser Ser Ala Asp Cys
465 470 475 480

Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
485 490

<210> 85
<211> 513
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 85

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

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

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

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

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

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

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

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

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

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
165 170 175

Ile Gly His Ile Asn Ala Gly Asp Ile Ala Tyr Tyr Ala Thr Trp Ala
180 185 190

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

108

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

Ala Arg Gly Ala Gly Gly Phe Ser Thr Gly Pro Phe Lys Leu Trp Gly
225 230 235 240

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

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

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

Ser Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
290 295 300

Ala Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser
305 310 315 320

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

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

Phe Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp
355 360 365

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
370 375 380

Gly Ser Gly Gly Gly Ser Gly Gln Ser Gln Leu Val Glu Ser Gly Gly
385 390 395 400

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Val Ser
405 410 415

Gly Phe Ser Leu Ser Ser Tyr Ala Met Gly Trp Val Arg Gln Ala Pro

109

420

425

430

Gly Lys Cys Leu Glu Tyr Ile Gly Tyr Ile Ser Lys Ile Gly Thr Thr
435 440 445

Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn
450 455 460

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
465 470 475 480

Thr Ala Val Tyr Phe Cys Ala Arg Gly Ser Ser Ser Gly Gly Tyr Leu
485 490 495

Asp Asp Gly Phe Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser
500 505 510

Ser

<210> 86

<211> 494

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 86

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

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

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

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

															110					
Ser	Gly	Ser	Gly	Arg	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	65	70	75	80	
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Val	Tyr	Asp	Ser	Asn	Asn	85	90	95		
Val	Glu	Asn	Val	Phe	Gly	Cys	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly	Gly	100	105	110		
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	115	120	125		
Gly	Gly	Ser	Gln	Ser	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	130	135	140		
Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Val	Ser	Gly	Phe	Ser	Leu	145	150	155	160	
Ser	Ser	Tyr	Ala	Met	Gly	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Cys	Leu	165	170	175		
Glu	Tyr	Ile	Gly	Tyr	Ile	Ser	Lys	Ile	Gly	Thr	Thr	Tyr	Tyr	Ala	Ser	180	185	190		
Trp	Ala	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Lys	Asp	Asn	Ser	Lys	Asn	Thr	195	200	205		
Val	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	210	215	220		
Phe	Cys	Ala	Arg	Gly	Ser	Ser	Ser	Gly	Gly	Tyr	Leu	Asp	Asp	Gly	Phe	225	230	235	240	
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	245	250	255		
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Ala	Leu	Gln	Met	Thr	Gln	Ser	Pro	Ser	260	265	270		
Ser	Leu	Ser	Ala	Arg	Val	Gly	Asp	Arg	Val	Thr	Ile	Lys	Cys	Gln	Ala					

275				280				111				285			
Ser	Gln	Ser	Ile	Ser	Asn	Tyr	Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly
290						295				300					
Lys	Pro	Pro	Lys	Phe	Leu	Ile	Tyr	Asp	Ala	Ser	Asp	Leu	Ala	Ser	Gly
305				310						315				320	
Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Arg	Asp	Phe	Thr	Leu
				325				330						335	
Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln
		340						345				350			
Gln	Val	Tyr	Asp	Ser	Asn	Asn	Val	Glu	Asn	Val	Phe	Gly	Cys	Gly	Thr
		355				360						365			
Lys	Val	Thr	Val	Leu	Gly	Gly	Gly	Ser	Gly	Gly	Ser	Asp	Ile	Gln	Met
370						375				380					
Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr
385				390						395				400	
Ile	Thr	Cys	Gln	Ser	Ser	Gln	Ser	Val	Phe	Ser	Asn	Asn	Tyr	Leu	Ala
				405				410						415	
Trp	Phe	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Lys	Arg	Leu	Ile	Tyr	Ser
		420						425				430			
Ala	Ser	Thr	Leu	Ala	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly
		435				440						445			
Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp
450						455				460					
Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gly	Ser	Tyr	Ala	Cys	Ser	Ser	Ala	Asp
465				470						475				480	
Cys	Tyr	Val	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly		
				485				490							

<210> 87
 <211> 516
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 87

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 115 120 125

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

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

Phe Ser Thr Thr Tyr Tyr Met Cys Trp Val Arg Gln Ala Pro Gly Lys

									113								
									170								175
Gly	Leu	Glu	Trp	Ile	Gly	Cys	Thr	Asn	Thr	Ala	Ser	Ser	Val	Arg	Thr		
			180					185					190				
Tyr	Tyr	Ala	Thr	Trp	Ala	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn		
		195					200					205					
Ser	Lys	Asn	Thr	Val	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp		
	210					215					220						
Thr	Ala	Thr	Tyr	Tyr	Cys	Ala	Arg	Asp	Met	Gly	Phe	Ala	Asp	Tyr	Ala		
225					230					235					240		
Leu	Asn	Leu	Trp	Gly	Gln	Gly	Thr	Gln	Val	Thr	Val	Ser	Ser	Gly	Gly		
				245					250					255			
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly		
			260					265					270				
Gly	Gly	Arg	Val	Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala		
		275					280					285					
Ser	Gly	Phe	Ser	Leu	Ser	Ser	Tyr	Asp	Met	Ser	Trp	Val	Arg	Gln	Ala		
	290					295					300						
Pro	Gly	Lys	Gly	Leu	Ala	Trp	Ile	Gly	Ala	Ser	Tyr	Ala	Ser	Gly	Pro		
305					310					315					320		
Thr	Tyr	Tyr	Ala	Ser	Trp	Ala	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp		
				325					330					335			
Asn	Ser	Lys	Asn	Thr	Val	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu		
			340					345					350				
Asp	Thr	Ala	Thr	Tyr	Phe	Cys	Ala	Arg	Gly	Gly	Trp	Thr	Gly	Thr	Ser		
		355					360					365					
His	Ser	Asn	Ile	Trp	Gly	Gln	Gly	Thr	Gln	Val	Thr	Val	Ser	Ser	Gly		
	370					375					380						

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
385 390 395 400

Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu
405 410 415

Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala Met Asn Trp
420 425 430

Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Trp Ile Gly His Ile Asn
435 440 445

Ala Gly Asp Ile Ala Tyr Tyr Ala Thr Trp Ala Lys Gly Arg Phe Thr
450 455 460

Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser
465 470 475 480

Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Ala Gly
485 490 495

Gly Phe Ser Thr Gly Pro Phe Lys Leu Trp Gly Gln Gly Thr Gln Val
500 505 510

Thr Val Ser Ser
515

<210> 88

<211> 493

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 88

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

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Ser Ile Tyr Ser Ser

115															
20				25				30							
Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile
		35				40						45			
Tyr	Leu	Ala	Ser	Thr	Leu	Ala	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
50						55						60			
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65				70						75				80	
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Ser	Thr	Asp	Tyr	Thr	Thr	Ser
				85				90						95	
Thr	His	Arg	Asn	Ser	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly
		100						105				110			
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly
		115				120						125			
Gly	Gly	Gly	Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Arg	Val
130						135						140			
Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Ser
145				150						155				160	
Phe	Ser	Thr	Thr	Tyr	Tyr	Met	Cys	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys
				165				170						175	
Gly	Leu	Glu	Trp	Ile	Gly	Cys	Thr	Asn	Thr	Ala	Ser	Ser	Val	Arg	Thr
		180						185						190	
Tyr	Tyr	Ala	Thr	Trp	Ala	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn
		195				200						205			
Ser	Lys	Asn	Thr	Val	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp
210						215						220			
Thr	Ala	Thr	Tyr	Tyr	Cys	Ala	Arg	Asp	Met	Gly	Phe	Ala	Asp	Tyr	Ala
225				230						235				240	

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

Gly Gly Ser Gly Gly Gly Gly Ser Ala Phe Glu Leu Thr Gln Ser Pro
260 265 270

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln
275 280 285

Ala Ser Glu Ser Ile Asn Ser Arg Leu Ala Trp Tyr Gln Gln Lys Pro
290 295 300

Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asp Leu Thr Ser
305 310 315 320

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
325 330 335

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
340 345 350

Gln Gly Tyr Gly Gly Ser Ser Thr Thr Thr Phe Gly Cys Gly Thr Lys
355 360 365

Leu Thr Val Leu Gly Gly Gly Ser Gly Gly Ser Asp Ile Gln Met Thr
370 375 380

Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile
385 390 395 400

Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu Ala Trp
405 410 415

Phe Gln Gln Lys Pro Gly Gln Ser Pro Lys Arg Leu Ile Tyr Ser Ala
420 425 430

Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
435 440 445

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
 450 455 460

Ala Thr Tyr Tyr Cys Leu Gly Ser Tyr Ala Cys Ser Ser Ala Asp Cys
 465 470 475 480

Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
 485 490

<210> 89

<211> 513

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 89

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

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

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

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

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

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

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 115 120 125

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

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

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 165 170 175

Ile Gly His Ile Asn Ala Gly Asp Ile Ala Tyr Tyr Ala Thr Trp Ala
 180 185 190

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

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

Ala Arg Gly Ala Gly Gly Phe Ser Thr Gly Pro Phe Lys Leu Trp Gly
 225 230 235 240

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

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

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

Ser Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 290 295 300

Ala Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser
 305 310 315 320

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

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

Phe Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp
 355 360 365

Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
 370 375 380

Gly Ser Gly Gly Gly Ser Gly Gln Ser Gln Leu Val Glu Ser Gly Gly
 385 390 395 400

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Val Ser
 405 410 415

Gly Phe Ser Leu Ser Ser Tyr Ala Met Gly Trp Val Arg Gln Ala Pro
 420 425 430

Gly Lys Cys Leu Glu Tyr Ile Gly Tyr Ile Ser Lys Ile Gly Thr Thr
 435 440 445

Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn
 450 455 460

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
 465 470 475 480

Thr Ala Thr Tyr Phe Cys Ala Arg Gly Ser Ser Ser Gly Gly Tyr Leu
 485 490 495

Asp Asp Gly Phe Asp Pro Trp Gly Gln Gly Thr Gln Val Thr Val Ser
 500 505 510

Ser

<210> 90

<211> 501

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 90

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

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

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 115 120 125

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

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

Ser Ser Tyr Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Cys Leu
 165 170 175

Glu Tyr Ile Gly Tyr Ile Ser Lys Ile Gly Thr Thr Tyr Tyr Ala Ser
 180 185 190

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

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

Phe Cys Ala Arg Gly Ser Ser Ser Gly Gly Tyr Leu Asp Asp Gly Phe
 225 230 235 240

Asp Pro Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly
 245 250 255

Gly Ser Gly Gly Gly Gly Ser Ala Leu Gln Met Thr Gln Ser Pro Ser
 260 265 270

Ser Leu Ser Ala Arg Val Gly Asp Arg Val Thr Ile Lys Cys Gln Ala
 275 280 285

Ser Gln Ser Ile Ser Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly
 290 295 300

Lys Pro Pro Lys Phe Leu Ile Tyr Asp Ala Ser Asp Leu Ala Ser Gly
 305 310 315 320

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Phe Thr Leu
 325 330 335

Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln
 340 345 350

Gln Val Tyr Asp Ser Asn Asn Val Glu Asn Val Phe Gly Cys Gly Thr
 355 360 365

Lys Val Thr Val Leu Gly Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly
 370 375 380

Gly Ser Gly Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 385 390 395 400

122
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ser Ser Gln Ser Val
405 410 415

Phe Ser Asn Asn Tyr Leu Ala Trp Phe Gln Gln Lys Pro Gly Gln Ser
420 425 430

Pro Lys Arg Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser Gly Val Pro
435 440 445

Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
450 455 460

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gly Ser
465 470 475 480

Tyr Ala Cys Ser Ser Ala Asp Cys Tyr Val Phe Gly Thr Gly Thr Lys
485 490 495

Val Thr Val Leu Gly
500

<210> 91
<211> 513
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 91

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

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

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

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

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

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

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

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

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

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
165 170 175

Ile Gly His Ile Asn Ala Gly Asp Ile Ala Tyr Tyr Ala Thr Trp Ala
180 185 190

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

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

Ala Arg Gly Ala Gly Gly Phe Ser Thr Gly Pro Phe Lys Leu Trp Gly
225 230 235 240

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

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

124

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

Ser Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
290 295 300

Ala Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser
305 310 315 320

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

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

Phe Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp
355 360 365

Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
370 375 380

Gly Ser Gly Gly Gly Ser Gly Gln Ser Gln Leu Val Glu Ser Gly Gly
385 390 395 400

Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Val Ser
405 410 415

Gly Phe Ser Leu Ser Ser Tyr Ala Met Gly Trp Val Arg Gln Ala Pro
420 425 430

Gly Lys Cys Leu Glu Tyr Ile Gly Tyr Ile Ser Lys Ile Gly Thr Thr
435 440 445

Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys Asp Asn
450 455 460

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
465 470 475 480

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

485 125 490 495

Asp Asp Gly Phe Asp Pro Trp Gly Gln Gly Thr Gln Val Thr Val Ser
500 505 510

Ser

<210> 92
<211> 494
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 92

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

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

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
115 120 125

Gly Gly Ser Gln Ser Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln
 130 135 126 140

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

Ser Ser Tyr Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Cys Leu
 165 170 175

Glu Tyr Ile Gly Tyr Ile Ser Lys Ile Gly Thr Thr Tyr Tyr Ala Ser
 180 185 190

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

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

Phe Cys Ala Arg Gly Ser Ser Ser Gly Gly Tyr Leu Asp Asp Gly Phe
 225 230 235 240

Asp Pro Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly
 245 250 255

Gly Ser Gly Gly Gly Gly Ser Ala Leu Gln Met Thr Gln Ser Pro Ser
 260 265 270

Ser Leu Ser Ala Arg Val Gly Asp Arg Val Thr Ile Lys Cys Gln Ala
 275 280 285

Ser Gln Ser Ile Ser Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly
 290 295 300

Lys Pro Pro Lys Phe Leu Ile Tyr Asp Ala Ser Asp Leu Ala Ser Gly
 305 310 315 320

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Phe Thr Leu
 325 330 335

Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln

127

340

345

350

Gln Val Tyr Asp Ser Asn Asn Val Glu Asn Val Phe Gly Cys Gly Thr
355 360 365

Lys Val Thr Val Leu Gly Gly Gly Ser Gly Gly Ser Asp Ile Gln Met
370 375 380

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
385 390 395 400

Ile Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu Ala
405 410 415

Trp Phe Gln Gln Lys Pro Gly Gln Ser Pro Lys Arg Leu Ile Tyr Ser
420 425 430

Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
435 440 445

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
450 455 460

Phe Ala Thr Tyr Tyr Cys Leu Gly Ser Tyr Ala Cys Ser Ser Ala Asp
465 470 475 480

Cys Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
485 490

<210> 93

<211> 118

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 93

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

128
Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Leu Ser Leu Ser Arg Asn
20 25 30

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

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

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

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

Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 94
<211> 118
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 94

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

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

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

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

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

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

Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 95

<211> 118

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 95

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

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

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

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

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

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

Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly Gln Gly Thr
100 105 110

Gln Val Thr Val Ser Ser
115

<210> 96
<211> 118
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 96

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

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

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

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

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

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

Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly Gln Gly Thr
100 105 110

Gln Val Thr Val Ser Ser
115

<210> 97
<211> 111
<212> PRT
<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 97

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

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

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

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

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

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

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

<210> 98

<211> 111

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 98

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

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

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

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

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

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

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

<210> 99

<211> 124

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 99

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

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

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

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

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

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

Arg Asp Arg Tyr Asp Ser Gly Ala Tyr Leu Tyr Thr Thr Tyr Phe Asn

133

100

105

110

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

<210> 100

<211> 124

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 100

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

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

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

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

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

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

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

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

<210> 101

<211> 112

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 101

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

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

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

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

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

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

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

<210> 102

<211> 112

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 102

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

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

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Lys Leu Leu Ile

135

35

40

45

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

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

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

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

<210> 103

<211> 751

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 103

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

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

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

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

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

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

136
 Thr Thr Phe Gly Cys Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
 100 105 110

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

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser
 130 135 140

Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Ala
 145 150 155 160

Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser Trp
 165 170 175

Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val
 180 185 190

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe
 195 200 205

Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp Gly
 210 215 220

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

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Asp Ile Gln
 245 250 255

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
 260 265 270

Thr Ile Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu
 275 280 285

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

Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser

137																
305				310				315				320				
Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	
				325					330					335		
Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gly	Ser	Tyr	Ala	Cys	Ser	Ser	Ala	
				340					345					350		
Asp	Cys	Tyr	Val	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly	Gly	
				355					360					365		
Gly	Gly	Gly	Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	
				370					375					380		
Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Ser	
				385					390					395		
Leu	Ser	Ser	Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Cys	
				405					410					415		
Leu	Glu	Trp	Ile	Gly	His	Ile	Asn	Ala	Gly	Asp	Ile	Ala	Tyr	Tyr	Ala	
				420					425					430		
Thr	Trp	Ala	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	
				435					440					445		
Thr	Val	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	
				450					455					460		
Tyr	Phe	Cys	Ala	Arg	Gly	Ala	Gly	Gly	Phe	Ser	Thr	Gly	Pro	Phe	Lys	
				465					470					475		
Leu	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	
				485					490					495		
Ser	Gly	Gly	Gly	Gly	Ser	Ala	Gln	Gln	Leu	Thr	Gln	Ser	Pro	Ser	Ser	
				500					505					510		
Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Gln	Ala	Ser	
				515					520					525		

Gln Asn Val Trp Asn Asn Asn Tyr Leu Ser Trp Phe Gln Gln Lys Pro
 530 535 540

Gly Lys Pro Pro Lys Leu Leu Ile Val Thr Ala Ser Thr Leu Ala Ser
 545 550 555 560

Gly Val Ser Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 565 570 575

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
 580 585 590

Ala Gly Gly Phe Ser Gly Glu Ile Arg Ala Phe Gly Cys Gly Thr Lys
 595 600 605

Val Thr Val Leu Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Gln Leu Val Glu Ser
 625 630 635 640

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala
 645 650 655

Val Ser Gly Leu Ser Leu Ser Arg Asn Ala Met Ser Trp Val Arg Gln
 660 665 670

Ala Pro Gly Lys Cys Leu Glu Trp Ile Gly Ile Ile Leu Thr Ser Gly
 675 680 685

Ser Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys
 690 695 700

Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala
 705 710 715 720

Glu Asp Thr Ala Val Tyr Phe Cys Val Arg Gly Ile Ala Ser Ser Ser
 725 730 735

Leu Lys Ser Phe Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 740 745 750

<210> 104
 <211> 488
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 104

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

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

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 115 120 125

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

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

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

Glu Trp Ile Gly Ile Ile Leu Thr Ser Gly Ser Thr Tyr Tyr Ala Ser
 180 185 190

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

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

Phe Cys Val Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly
 225 230 235 240

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

Gly Gly Ser Ala Phe Glu Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
 260 265 270

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Ser Ile
 275 280 285

Asn Ser Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys
 290 295 300

Leu Leu Ile Tyr Asp Ala Ser Asp Leu Thr Ser Gly Val Pro Ser Arg
 305 310 315 320

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser
 325 330 335

Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Tyr Gly Gly
 340 345 350

Ser Ser Thr Thr Thr Phe Gly Cys Gly Thr Lys Leu Thr Val Leu Gly
 355 360 365

Gly Gly Ser Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
 370 375 380

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ser Ser
 385 390 395 400

Gln Ser Val Phe Ser Asn Asn Tyr Leu Ala Trp Phe Gln Gln Lys Pro
 405 410 415

Gly Gln Ser Pro Lys Arg Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser
 420 425 430

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 435 440 445

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
 450 455 460

Leu Gly Ser Tyr Ala Cys Ser Ser Ala Asp Cys Tyr Val Phe Gly Thr
 465 470 475 480

Gly Thr Lys Val Thr Val Leu Gly
 485

<210> 105

<211> 511

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 105

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

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

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 115 120 125

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

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

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

Glu Trp Ile Gly Ile Ile Leu Thr Ser Gly Ser Thr Tyr Tyr Ala Ser
 180 185 190

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

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

Phe Cys Val Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly
 225 230 235 240

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

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

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

Ser Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 290 295 300

Ala Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser
 305 310 315 320

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

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

Phe Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp
 355 360 365

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
 370 375 380

Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu Val Glu Ser Gly Gly
 385 390 395 400

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
 405 410 415

Gly Phe Ser Leu Ser Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro
 420 425 430

Gly Lys Cys Leu Glu Trp Ile Gly His Ile Asn Ala Gly Asp Ile Ala
 435 440 445

Tyr Tyr Ala Thr Trp Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
 450 455 460

144

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
465 470 475 480

Thr Ala Val Tyr Phe Cys Ala Arg Gly Ala Gly Gly Phe Ser Thr Gly
485 490 495

Pro Phe Lys Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
500 505 510

<210> 106

<211> 488

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 106

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

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

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
115 120 125

145

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

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

Ser Arg Asn Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Cys Leu
165 170 175

Glu Trp Ile Gly Ile Ile Leu Thr Ser Gly Ser Thr Tyr Tyr Ala Ser
180 185 190

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

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

Phe Cys Val Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly
225 230 235 240

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

Gly Gly Ser Ala Phe Glu Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
260 265 270

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Ser Ile
275 280 285

Asn Ser Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys
290 295 300

Leu Leu Ile Tyr Asp Ala Ser Asp Leu Thr Ser Gly Val Pro Ser Arg
305 310 315 320

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser
325 330 335

146

Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Tyr Gly Gly
340 345 350

Ser Ser Thr Thr Thr Phe Gly Cys Gly Thr Lys Leu Thr Val Leu Gly
355 360 365

Gly Gly Ser Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
370 375 380

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ser Ser
385 390 395 400

Gln Ser Val Phe Ser Asn Asn Tyr Leu Ala Trp Phe Gln Gln Lys Pro
405 410 415

Gly Gln Ser Pro Lys Arg Leu Ile Tyr Ser Ala Ser Thr Leu Ala Ser
420 425 430

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
435 440 445

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
450 455 460

Leu Gly Ser Tyr Ala Cys Ser Ser Ala Asp Cys Tyr Val Phe Gly Thr
465 470 475 480

Gly Thr Lys Val Thr Val Leu Gly
485

<210> 107

<211> 511

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 107

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

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

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
 115 120 125

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

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

Ser Arg Asn Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Cys Leu
 165 170 175

Glu Trp Ile Gly Ile Ile Leu Thr Ser Gly Ser Thr Tyr Tyr Ala Ser
 180 185 190

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

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

148

Phe Cys Val Arg Gly Ile Ala Ser Ser Ser Leu Lys Ser Phe Trp Gly
225 230 235 240

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

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

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

Ser Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
290 295 300

Ala Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser
305 310 315 320

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

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

Phe Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp
355 360 365

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
370 375 380

Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu Val Glu Ser Gly Gly
385 390 395 400

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
405 410 415

Gly Phe Ser Leu Ser Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro
420 425 430

Gly Lys Cys Leu Glu Trp Ile Gly His Ile Asn Ala Gly Asp Ile Ala

149

435

440

445

Tyr Tyr Ala Thr Trp Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
450 455 460

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
465 470 475 480

Thr Ala Val Tyr Phe Cys Ala Arg Gly Ala Gly Gly Phe Ser Thr Gly
485 490 495

Pro Phe Lys Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
500 505 510

<210> 108
<211> 758
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 108

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

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

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

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

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

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

150
 Thr Thr Phe Gly Cys Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
 100 105 110
 Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro
 115 120 125
 Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser
 130 135 140
 Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Ala
 145 150 155 160
 Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser Trp
 165 170 175
 Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val
 180 185 190
 Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe
 195 200 205
 Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp Gly
 210 215 220
 Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 225 230 235 240
 Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Asp Ile Gln
 245 250 255
 Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
 260 265 270
 Thr Ile Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu
 275 280 285
 Ala Trp Phe Gln Gln Lys Pro Gly Gln Ser Pro Lys Arg Leu Ile Tyr
 290 295 300
 Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser

305			310						151 315					320		
Gly	Ser	Gly	Thr	Asp 325	Phe	Thr	Leu	Thr	Ile 330	Ser	Ser	Leu	Gln	Pro 335	Glu	
Asp	Phe	Ala	Thr 340	Tyr	Tyr	Cys	Leu	Gly 345	Ser	Tyr	Ala	Cys	Ser 350	Ser	Ala	
Asp	Cys	Tyr 355	Val	Phe	Gly	Thr	Gly 360	Thr	Lys	Val	Thr	Val 365	Leu	Gly	Gly	
Gly	Gly 370	Gly	Ser	Glu	Val	Gln 375	Leu	Val	Glu	Ser	Gly 380	Gly	Gly	Arg	Val	
Gln 385	Pro	Gly	Gly	Ser	Leu 390	Arg	Leu	Ser	Cys	Ala 395	Ala	Ser	Gly	Phe	Ser 400	
Leu	Ser	Ser	Tyr	Ala 405	Met	Asn	Trp	Val	Arg 410	Gln	Ala	Pro	Gly	Lys 415	Cys	
Leu	Glu	Trp	Ile 420	Gly	His	Ile	Asn	Ala 425	Gly	Asp	Ile	Ala	Tyr 430	Tyr	Ala	
Thr	Trp	Ala 435	Lys	Gly	Arg	Phe	Thr 440	Ile	Ser	Arg	Asp	Asn 445	Ser	Lys	Asn	
Thr 450	Val	Tyr	Leu	Gln	Met	Asn 455	Ser	Leu	Arg	Ala	Glu 460	Asp	Thr	Ala	Thr	
Tyr 465	Phe	Cys	Ala	Arg	Gly 470	Ala	Gly	Gly	Phe	Ser 475	Thr	Gly	Pro	Phe	Lys 480	
Leu	Trp	Gly	Gln	Gly 485	Thr	Gln	Val	Thr	Val 490	Ser	Ser	Gly	Gly	Gly 495	Gly	
Ser	Gly	Gly	Gly 500	Gly	Ser	Asp	Val	Gln 505	Met	Thr	Gln	Ser	Pro 510	Ser	Ser	
Leu	Ser	Ala 515	Ser	Val	Gly	Asp	Arg 520	Val	Thr	Ile	Thr	Cys 525	Arg	Ala	Ser	

Glu Asn Ile Tyr Ser Gly Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
 530 535 540

Pro Pro Lys Leu Leu Ile Tyr Arg Ala Ser Thr Leu Ala Ser Gly Val
 545 550 555 560

Ser Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
 565 570 575

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly
 580 585 590

Gly Tyr Tyr Ser Ser Ser Ser Thr Tyr Ile Ala Phe Gly Thr Gly Thr
 595 600 605

Lys Val Thr Val Leu Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 610 615 620

Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Ser Gln Ser Gln Val Val Glu
 625 630 635 640

Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
 645 650 655

Ala Val Ser Gly Phe Asp Leu Ser Ser Tyr Ala Val Ser Trp Val Arg
 660 665 670

Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Ile Ile Tyr Pro Arg
 675 680 685

Ala Asn Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser
 690 695 700

Lys Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
 705 710 715 720

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Asp Arg Tyr Asp Ser
 725 730 735

Gly Ala Tyr Leu Tyr Thr Thr Tyr Phe Asn Leu Trp Gly Gln Gly Thr
 740 745 750

Gln Val Thr Val Ser Ser
 755

<210> 109
 <211> 751
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 109

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

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

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

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

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

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

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

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

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser
 130 135 140

Ser Tyr Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Ala
 145 150 155 160

Trp Ile Gly Ala Ser Tyr Ala Ser Gly Pro Thr Tyr Tyr Ala Ser Trp
 165 170 175

Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val
 180 185 190

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe
 195 200 205

Cys Ala Arg Gly Gly Trp Thr Gly Thr Ser His Ser Asn Ile Trp Gly
 210 215 220

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

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
 245 250 255

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
 260 265 270

Thr Ile Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu
 275 280 285

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

Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
 305 310 315 320

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
 325 330 335

Asp Phe Ala Thr Tyr Tyr Cys Leu Gly Ser Tyr Ala Cys Ser Ser Ala
 340 345 350

Asp Cys Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly
 355 360 365

Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Arg Val
 370 375 380

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser
 385 390 395 400

Leu Ser Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Cys
 405 410 415

Leu Glu Trp Ile Gly His Ile Asn Ala Gly Asp Ile Ala Tyr Tyr Ala
 420 425 430

Thr Trp Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 435 440 445

Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr
 450 455 460

Tyr Phe Cys Ala Arg Gly Ala Gly Gly Phe Ser Thr Gly Pro Phe Lys
 465 470 475 480

Leu Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly
 485 490 495

Ser Gly Gly Gly Gly Ser Ala Gln Gln Leu Thr Gln Ser Pro Ser Ser
 500 505 510

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser
 515 520 525

Gln Asn Val Trp Asn Asn Asn Tyr Leu Ser Trp Phe Gln Gln Lys Pro
 530 535 540

Gly Lys Pro Pro Lys Leu Leu Ile Val Thr Ala Ser Thr Leu Ala Ser
 545 550 555 560

156
Gly Val Ser Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
565 570 575

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
580 585 590

Ala Gly Gly Phe Ser Gly Glu Ile Arg Ala Phe Gly Cys Gly Thr Lys
595 600 605

Val Thr Val Leu Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
610 615 620

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Gln Leu Val Glu Ser
625 630 635 640

Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala
645 650 655

Val Ser Gly Leu Ser Leu Ser Arg Asn Ala Met Ser Trp Val Arg Gln
660 665 670

Ala Pro Gly Lys Cys Leu Glu Trp Ile Gly Ile Ile Leu Thr Ser Gly
675 680 685

Ser Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser Lys
690 695 700

Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala
705 710 715 720

Glu Asp Thr Ala Thr Tyr Phe Cys Val Arg Gly Ile Ala Ser Ser Ser
725 730 735

Leu Lys Ser Phe Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
740 745 750

<210> 110
<211> 495
<212> PRT
<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 110

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 115 120 125

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

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

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

Leu Glu Trp Ile Gly Ile Ile Tyr Pro Arg Ala Asn Thr Tyr Tyr Ala
 180 185 190

158

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

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

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

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Phe Glu Leu Thr Gln
260 265 270

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
275 280 285

Cys Gln Ala Ser Glu Ser Ile Asn Ser Arg Leu Ala Trp Tyr Gln Gln
290 295 300

Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asp Leu
305 310 315 320

Thr Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
325 330 335

Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
340 345 350

Tyr Cys Gln Gly Tyr Gly Gly Ser Ser Thr Thr Thr Phe Gly Cys Gly
355 360 365

Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gly Gly Ser Asp Ile Gln
370 375 380

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
385 390 395 400

Thr Ile Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu

										159						
				405					410						415	
Ala	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Lys	Arg	Leu	Ile	Tyr	
			420					425					430			
Ser	Ala	Ser	Thr	Leu	Ala	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	
		435					440					445				
Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	
	450					455					460					
Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gly	Ser	Tyr	Ala	Cys	Ser	Ser	Ala	
465					470					475					480	
Asp	Cys	Tyr	Val	Phe	Gly	Thr	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly		
				485					490					495		
<210>	111															
<211>	518															
<212>	PRT															
<213>	Artificial sequence															
<220>																
<223>	artificial antibody-based sequence															
<400>	111															
Asp	Val	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	
1				5					10					15		
Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Glu	Asn	Ile	Tyr	Ser	Gly	
			20					25					30			
Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Pro	Pro	Lys	Leu	Leu	Ile	
		35					40					45				
Tyr	Arg	Ala	Ser	Thr	Leu	Ala	Ser	Gly	Val	Ser	Ser	Arg	Phe	Ser	Gly	
	50					55					60					
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	
65					70					75					80	

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Tyr Ser Ser Ser
 85 90 95 160

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

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 115 120 125

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

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

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

Leu Glu Trp Ile Gly Ile Ile Tyr Pro Arg Ala Asn Thr Tyr Tyr Ala
 180 185 190

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

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

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

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
 260 265 270

Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
 275 280 285

Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Asp Met Ser Trp Val Arg

290					295					161					300				
Gln 305	Ala	Pro	Gly	Lys	Gly 310	Leu	Ala	Trp	Ile	Gly 315	Ala	Ser	Tyr	Ala	Ser 320				
Gly	Pro	Thr	Tyr	Tyr 325	Ala	Ser	Trp	Ala	Lys 330	Gly	Arg	Phe	Thr	Ile 335	Ser				
Arg	Asp	Asn	Ser 340	Lys	Asn	Thr	Val	Tyr 345	Leu	Gln	Met	Asn	Ser 350	Leu	Arg				
Ala	Glu	Asp 355	Thr	Ala	Thr	Tyr	Phe 360	Cys	Ala	Arg	Gly	Gly 365	Trp	Thr	Gly				
Thr	Ser 370	His	Ser	Asn	Ile	Trp 375	Gly	Gln	Gly	Thr	Gln 380	Val	Thr	Val	Ser				
Ser 385	Gly	Gly	Gly	Ser	Gly 390	Gly	Gly	Ser	Gly	Gly 395	Gly	Ser	Gly	Glu	Val 400				
Gln	Leu	Val	Glu	Ser 405	Gly	Gly	Gly	Arg	Val 410	Gln	Pro	Gly	Gly	Ser 415	Leu				
Arg	Leu	Ser	Cys 420	Ala	Ala	Ser	Gly	Phe 425	Ser	Leu	Ser	Ser	Tyr 430	Ala	Met				
Asn	Trp	Val 435	Arg	Gln	Ala	Pro	Gly 440	Lys	Cys	Leu	Glu	Trp 445	Ile	Gly	His				
Ile 450	Asn	Ala	Gly	Asp	Ile	Ala 455	Tyr	Tyr	Ala	Thr	Trp 460	Ala	Lys	Gly	Arg				
Phe 465	Thr	Ile	Ser	Arg	Asp 470	Asn	Ser	Lys	Asn	Thr 475	Val	Tyr	Leu	Gln	Met 480				
Asn	Ser	Leu	Arg	Ala 485	Glu	Asp	Thr	Ala	Thr 490	Tyr	Phe	Cys	Ala	Arg 495	Gly				
Ala	Gly	Gly	Phe 500	Ser	Thr	Gly	Pro	Phe 505	Lys	Leu	Trp	Gly	Gln 510	Gly	Thr				

Gln Val Thr Val Ser Ser
515

<210> 112
<211> 495
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 112

Asp Val Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Gly
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Lys Leu Leu Ile
35 40 45

Tyr Arg Ala Ser Thr Leu Ala Ser Gly Val Ser Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Tyr Ser Ser Ser
85 90 95

Ser Thr Tyr Ile Ala Phe Gly Cys Gly Thr Lys Val Thr Val Leu Gly
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Gln Ser Gln Val Val Glu Ser Gly Gly Gly Arg Val
130 135 140

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Phe Asp

									163																		
145				150								155								160							
Leu	Ser	Ser	Tyr	Ala 165	Val	Ser	Trp	Val	Arg 170	Gln	Ala	Pro	Gly	Lys 175	Cys												
Leu	Glu	Trp	Ile 180	Gly	Ile	Ile	Tyr	Pro 185	Arg	Ala	Asn	Thr	Tyr 190	Tyr	Ala												
Ser	Trp	Ala 195	Lys	Gly	Arg	Phe	Thr 200	Ile	Ser	Lys	Asp 205	Asn	Ser	Lys	Asn												
Thr	Val 210	Tyr	Leu	Gln	Met	Asn 215	Ser	Leu	Arg	Ala	Glu 220	Asp	Thr	Ala	Thr												
Tyr 225	Phe	Cys	Ala	Arg	Asp 230	Arg	Tyr	Asp	Ser	Gly 235	Ala	Tyr	Leu	Tyr	Thr 240												
Thr	Tyr	Phe	Asn 245	Leu	Trp	Gly	Gln	Gly 250	Thr	Gln	Val	Thr	Val	Ser 255	Ser												
Gly	Gly	Gly	Gly 260	Ser	Gly	Gly	Gly 265	Ser	Ala	Phe	Glu 270	Leu	Thr	Gln													
Ser	Pro	Ser 275	Ser	Leu	Ser	Ala	Ser 280	Val	Gly	Asp	Arg 285	Val	Thr	Ile	Thr												
Cys 290	Gln	Ala	Ser	Glu	Ser	Ile 295	Asn	Ser	Arg	Leu	Ala 300	Trp	Tyr	Gln	Gln												
Lys 305	Pro	Gly	Gln	Pro	Pro 310	Lys	Leu	Leu	Ile 315	Tyr	Asp	Ala	Ser	Asp	Leu 320												
Thr	Ser	Gly	Val 325	Pro	Ser	Arg	Phe	Ser	Gly 330	Ser	Gly	Ser	Gly	Thr 335	Asp												
Phe	Thr	Leu	Thr 340	Ile	Ser	Ser	Leu	Gln 345	Pro	Glu	Asp	Phe	Ala 350	Thr	Tyr												
Tyr	Cys	Gln 355	Gly	Tyr	Gly	Gly	Ser 360	Ser	Thr	Thr	Thr 365	Phe	Gly	Cys	Gly												

Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gly Gly Ser Asp Ile Gln
 370 375 380

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
 385 390 395 400

Thr Ile Thr Cys Gln Ser Ser Gln Ser Val Phe Ser Asn Asn Tyr Leu
 405 410 415

Ala Trp Phe Gln Gln Lys Pro Gly Gln Ser Pro Lys Arg Leu Ile Tyr
 420 425 430

Ser Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
 435 440 445

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
 450 455 460

Asp Phe Ala Thr Tyr Tyr Cys Leu Gly Ser Tyr Ala Cys Ser Ser Ala
 465 470 475 480

Asp Cys Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
 485 490 495

<210> 113
 <211> 518
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 113

Asp Val Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Gly
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Lys Leu Leu Ile

35					40					165					45				
Tyr	Arg	Ala	Ser	Thr	Leu	Ala	Ser	Gly	Val	Ser	Ser	Arg	Phe	Ser	Gly				
	50					55					60								
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro				
65					70					75					80				
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gly	Gly	Tyr	Tyr	Ser	Ser	Ser				
				85					90					95					
Ser	Thr	Tyr	Ile	Ala	Phe	Gly	Cys	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly				
			100					105					110						
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly				
		115				120					125								
Gly	Gly	Gly	Ser	Gln	Ser	Gln	Val	Val	Glu	Ser	Gly	Gly	Gly	Arg	Val				
	130					135					140								
Gln	Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Val	Ser	Gly	Phe	Asp				
145					150					155					160				
Leu	Ser	Ser	Tyr	Ala	Val	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Cys				
				165					170					175					
Leu	Glu	Trp	Ile	Gly	Ile	Ile	Tyr	Pro	Arg	Ala	Asn	Thr	Tyr	Tyr	Ala				
			180					185					190						
Ser	Trp	Ala	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Lys	Asp	Asn	Ser	Lys	Asn				
		195					200					205							
Thr	Val	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Thr				
	210					215					220								
Tyr	Phe	Cys	Ala	Arg	Asp	Arg	Tyr	Asp	Ser	Gly	Ala	Tyr	Leu	Tyr	Thr				
225					230					235					240				
Thr	Tyr	Phe	Asn	Leu	Trp	Gly	Gln	Gly	Thr	Gln	Val	Thr	Val	Ser	Ser				
				245					250					255					

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu
260 265 270

Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
275 280 285

Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Asp Met Ser Trp Val Arg
290 295 300

Gln Ala Pro Gly Lys Gly Leu Ala Trp Ile Gly Ala Ser Tyr Ala Ser
305 310 315 320

Gly Pro Thr Tyr Tyr Ala Ser Trp Ala Lys Gly Arg Phe Thr Ile Ser
325 330 335

Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg
340 345 350

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly Gly Trp Thr Gly
355 360 365

Thr Ser His Ser Asn Ile Trp Gly Gln Gly Thr Gln Val Thr Val Ser
370 375 380

Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val
385 390 395 400

Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly Ser Leu
405 410 415

Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala Met
420 425 430

Asn Trp Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Trp Ile Gly His
435 440 445

Ile Asn Ala Gly Asp Ile Ala Tyr Tyr Ala Thr Trp Ala Lys Gly Arg
450 455 460

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr Leu Gln Met
 465 470 475 480

Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Gly
 485 490 495

Ala Gly Gly Phe Ser Thr Gly Pro Phe Lys Leu Trp Gly Gln Gly Thr
 500 505 510

Gln Val Thr Val Ser Ser
 515

<210> 114

<211> 122

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 114

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ala Asn
 20 25 30

Tyr Tyr Pro Cys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 35 40 45

Ile Gly Cys Ile Tyr Gly Gly Ser Ser Asp Ile Thr Tyr Asp Ala Asn
 50 55 60

Trp Thr Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr
 65 70 75 80

Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
 100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 115
 <211> 122
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 115

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ala Asn
 20 25 30

Tyr Tyr Pro Cys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 35 40 45

Ile Gly Cys Ile Tyr Gly Gly Ser Ser Asp Ile Thr Tyr Asp Ala Asn
 50 55 60

Trp Thr Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr
 65 70 75 80

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
 100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 116
 <211> 122
 <212> PRT
 <213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 116

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ala Asn
 20 25 30

Tyr Tyr Pro Cys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 35 40 45

Ile Gly Cys Ile Tyr Gly Gly Ser Ser Asp Ile Thr Tyr Asp Ala Asn
 50 55 60

Trp Thr Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr
 65 70 75 80

Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr
 85 90 95

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
 100 105 110

Gly Gln Gly Thr Gln Val Thr Val Ser Ser
 115 120

<210> 117

<211> 122

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 117

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Arg Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ala Asn
 20 25 30

170

Tyr Tyr Pro Cys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
35 40 45

Ile Gly Cys Ile Tyr Gly Gly Ser Ser Asp Ile Thr Tyr Asp Ala Asn
50 55 60

Trp Thr Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr
65 70 75 80

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr
85 90 95

Tyr Cys Ala Arg Ser Ala Trp Tyr Ser Gly Trp Gly Gly Asp Leu Trp
100 105 110

Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 118

<211> 108

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 118

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser Ile Asn Asn Val
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Arg Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro

				171			
65		70		75		80	

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Ser Tyr Gly Asn Tyr Gly
85 90 95

Asp Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105

$\langle 210 \rangle$	119
$\langle 211 \rangle$	108
$\langle 212 \rangle$	PRT
$\langle 213 \rangle$	Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 119

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Asn Asn Val
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Arg Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Ser Tyr Gly Asn Tyr Gly
85 90 95

Asp Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105

<210>	120
<211>	121
<212>	PRT
<213>	Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 120

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Ile Asp Phe Asn Ser Asn
 20 25 30

Tyr Tyr Met Cys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp
 35 40 45

Met Gly Cys Ile Tyr Val Gly Ser His Val Asn Thr Tyr Tyr Ala Asn
 50 55 60

Trp Ala Lys Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr
 65 70 75 80

Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Ala Thr Ser Gly Ser Ser Val Leu Tyr Phe Lys Phe Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 121

<211> 121

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 121

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 Ile Asp Phe Asn Ser Asn

173

20

25

30

Tyr Tyr Met Cys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp
 35 40 45

Met Gly Cys Ile Tyr Val Gly Ser His Val Asn Thr Tyr Tyr Ala Asn
 50 55 60

Trp Ala Lys Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr
 65 70 75 80

Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Ala Thr Ser Gly Ser Ser Val Leu Tyr Phe Lys Phe Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 122

<211> 121

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 122

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ile Asp Phe Asn Ser Asn
 20 25 30

Tyr Tyr Met Cys Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp
 35 40 45

Ile Gly Cys Ile Tyr Val Gly Ser His Val Asn Thr Tyr Tyr Ala Asn
 50 55 60

Trp Ala Lys Gly Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln
65 70 75 80 174

Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Ala Thr Ser Gly Ser Ser Val Leu Tyr Phe Lys Phe Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 123
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 123

Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
1 5 10

<210> 124
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 124

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
1 5 10

<210> 125
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> artificial antibody-based sequence

<400> 125

Phe Gly Gly Gly Thr Gln Leu Ile Ile Leu Gly
 1 5 10

<210> 126
 <211> 11
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 126

Phe Gly Glu Gly Thr Glu Leu Thr Val Leu Gly
 1 5 10

<210> 127
 <211> 11
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 127

Phe Gly Ser Gly Thr Lys Val Thr Val Leu Gly
 1 5 10

<210> 128
 <211> 11
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 128

Phe Gly Gly Gly Thr Gln Leu Thr Val Leu Gly
 1 5 10

<210> 129
 <211> 11
 <212> PRT
 <213> Artificial sequence

<220>

176

<223> artificial antibody-based sequence

<400> 129

Phe Gly Gly Gly Thr Gln Leu Thr Ala Leu Gly
1 5 10

<210> 130

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 130

Phe Gly Cys Gly Thr Lys Val Thr Val Leu Gly
1 5 10

<210> 131

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 131

Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly
1 5 10

<210> 132

<211> 5

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<220>

<221> Repeat

<222> (1)..(5)

<223> (GGGGS)_n linker with n being selected from 1, 2, 3, 4, and 5

<400> 132

Gly Gly Gly Gly Ser

1 5

<210> 133
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<220>
 <221> Repeat
 <222> (1)..(5)
 <223> (GGGGS)_n linker with n being 2

<400> 133

Gly Gly Gly Gly Ser
 1 5

<210> 134
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<220>
 <221> Repeat
 <222> (1)..(5)
 <223> (GGGGS)_n linker with n being selected from 1, 2, 3, 4, 5, 6, 7,
 and 8

<400> 134

Gly Gly Gly Gly Ser
 1 5

<210> 135
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<220>
 <221> Repeat
 <222> (1)..(5)
 <223> (GGGGS)n linker with n being 4

<400> 135

Gly Gly Gly Gly Ser
 1 5

<210> 136
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 136

Gly Ser Gly Gly Ser
 1 5

<210> 137
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<220>
 <221> Repeat
 <222> (1)..(5)
 <223> (GGGGS)n linker with n being an integer of at least 1

<400> 137

Gly Gly Gly Gly Ser
 1 5

<210> 138
 <211> 4
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<220>
 <221> Repeat
 <222> (1)..(4)
 <223> (GGGS)_n linker with n being an integer of at least 1

<400> 138

Gly Gly Gly Ser
 1

<210> 139
 <211> 17
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 139

Cys Ile Tyr Gly Gly Ser Ser Asp Ile Thr Tyr Asp Ala Gln Trp Thr
 1 5 10 15

Lys

<210> 140
 <211> 256
 <212> PRT
 <213> Artificial sequence

<220>
 <223> artificial antibody-based sequence

<400> 140

Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Ser Ile Gly Thr Tyr
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Lys Leu Leu Ile
 35 40 45

Tyr Arg Ala Phe Ile Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly

<212> PRT

<213> Artificial sequence

<220>

<223> artificial antibody-based sequence

<400> 141

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Ser Ile Tyr Ser Ser
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Leu Ala Ser Thr Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Ser Thr Asp Tyr Thr Thr Ser
 85 90 95

Thr His Arg Asn Ser Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
 100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 115 120 125

Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val
 130 135 140

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser
 145 150 155 160

Phe Ser Thr Thr Tyr Tyr Met Cys Trp Val Arg Gln Ala Pro Gly Lys
 165 170 175

Gly Leu Glu Trp Ile Gly Cys Thr Asn Thr Ala Ser Ser Val Arg Thr

182

180

185

190

Tyr Tyr Ala Thr Trp Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
195 200 205

Ser Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
210 215 220

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Met Gly Phe Ala Asp Tyr Ala
225 230 235 240

Leu Asn Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
245 250