

SEQUENCE LISTING

<110> Hefei TG ImmunoPharma Co., Ltd.
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 Gly Tyr Thr Met Asn
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Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Tyr Met Asn
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Gln Gln Ser Lys Glu Asp Pro Arg Thr
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Asp Tyr Asn Met Asp
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Asp Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg
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Gly

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

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

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

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

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

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

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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 Tyr Ser Phe Thr Gly Tyr
20 25 30

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

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

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

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

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

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

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

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

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
 50 55 60

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

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

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

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

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

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

Ala Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

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

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

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

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

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

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

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

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

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

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

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

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

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

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

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

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

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

Gly Thr Thr Val Thr Val Ser Ser
115 120

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

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

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

Gly Asp Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe

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

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

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

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

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

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

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

Gly Thr Thr Val Thr Val Ser Ser
115 120

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

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

Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

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

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

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

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

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

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

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

Val Thr Val Ser Ser
245

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

<210> 29
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<212> PRT
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Asp Ile Val Leu Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
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Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly

100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser
 245

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

Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser
 245

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

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

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

Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
 20 25 30
 Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45
 Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 65 70 75 80
 Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser
 245

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
 50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
 165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190

Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

<210> 37
<211> 246
<212> PRT
<213> Artificial Sequence

<220>
<223> 37

<400> 37

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

<210> 38
<211> 246
<212> PRT
<213> Artificial Sequence

<220>
<223> 38

<400> 38

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

<210> 39
<211> 246
<212> PRT
<213> Artificial Sequence

<220>
<223> 39

<400> 39

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val

115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser
 245

<210> 40
 <211> 246
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 40

<400> 40

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

Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser
 245

<210> 41
 <211> 246
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 41

<400> 41

Asp Ile Val Leu Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
 20 25 30
 Gly Asp Ser Tyr Met Asn Trp Tyr Leu Gln Lys Pro Gly Gln Pro Pro
 35 40 45
 Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
 50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

<210> 42
<211> 246
<212> PRT
<213> Artificial Sequence

<220>
<223> 42

<400> 42

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser
245

<210> 43
<211> 246
<212> PRT
<213> Artificial Sequence

<220>
<223> 43

<400> 43

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

1		5		10		15									
Gln	Pro	Ala	Ser 20	Ile	Ser	Cys	Lys	Ala 25	Ser	Gln	Ser	Val	Asp 30	Tyr	Asp
Gly	Asp	Ser 35	Tyr	Met	Asn	Trp	Tyr 40	Leu	Gln	Lys	Pro	Gly 45	Gln	Pro	Pro
Gln	Leu 50	Leu	Ile	Tyr	Ala	Ala 55	Ser	Thr	Leu	His	Ser 60	Gly	Ile	Pro	Asp
Arg 65	Phe	Ser	Gly	Ser	Gly 70	Ser	Gly	Thr	Asp	Phe 75	Thr	Leu	Lys	Ile	Ser 80
Arg	Val	Glu	Ala	Glu 85	Asp	Val	Gly	Val	Tyr 90	Tyr	Cys	Gln	Gln	Ser 95	Lys
Glu	Asp	Pro	Arg 100	Thr	Phe	Gly	Gln	Gly 105	Thr	Lys	Leu	Glu	Ile 110	Lys	Gly
Gly	Gly	Gly 115	Ser	Gly	Gly	Gly	Gly 120	Ser	Gly	Gly	Gly	Gly 125	Ser	Glu	Val
Gln	Leu 130	Val	Gln	Ser	Gly	Ala 135	Glu	Val	Lys	Lys	Pro 140	Gly	Ala	Ser	Val
Lys 145	Val	Ser	Cys	Lys	Ala 150	Ser	Gly	Tyr	Thr	Phe 155	Thr	Asp	Tyr	Asn	Met 160
Asp	Trp	Val	Arg	Gln 165	Ala	Pro	Gly	Lys	Gly 170	Leu	Glu	Trp	Ile	Gly 175	Asp
Ile	Asn	Pro	Asn 180	Asn	Gly	Gly	Thr	Leu 185	Tyr	Asn	Gln	Lys	Phe 190	Arg	Gly
Arg	Val	Thr 195	Leu	Thr	Val	Asp	Lys 200	Ser	Ile	Ser	Thr	Ala 205	Tyr	Met	Glu
Leu	Ser 210	Arg	Leu	Arg	Ser	Asp 215	Asp	Thr	Ala	Val	Tyr 220	Tyr	Cys	Ala	Arg
Ser 225	Glu	Val	Phe	Tyr	Gly 230	Asn	Tyr	Ala	Asp	Tyr 235	Trp	Gly	Gln	Gly	Thr 240
Thr	Val	Thr	Val	Ser 245	Ser										

<210> 44
 <211> 246
 <212> PRT
 <213> Artificial Sequence

<220>

<223> 44

<400> 44

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Leu Leu Gln Gln Ser Gly Pro Glu Val Val Lys Pro Gly Ala Ser Val
130 135 140

Lys Ile Thr Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Ala Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Ile Val Asp Lys Ser Ser Ser Thr Ala Tyr Met Glu
195 200 205

Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Leu Thr Val Ser Ser

245

<210> 45
 <211> 246
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 45

<400> 45

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

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

Ala Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125

Leu Leu Gln Gln Ser Gly Pro Glu Val Val Lys Pro Gly Ala Ser Val
 130 135 140

Lys Ile Thr Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160

Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile Gly Asp
 165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190

Arg Val Thr Leu Ile Val Asp Lys Ser Ser Ser Thr Ala Tyr Met Glu
 195 200 205

Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Leu Thr Val Ser Ser
245

<210> 46
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> 46

<400> 46

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 47
<211> 232
<212> PRT
<213> Artificial Sequence

<220>
<223> 47

<400> 47

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1 5 10 15

Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
20 25 30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
35 40 45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
50 55 60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65 70 75 80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
85 90 95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
100 105 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
115 120 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr

130		135		140
Lys 145	Asn	Gln	Val	Ser
		Leu 150	Trp	Cys
			Leu	Val
			Lys 155	Gly
				Phe
				Tyr
				Pro
				Ser 160
Asp	Ile	Ala	Val	Glu
				165
			Trp	Glu
			Ser	Asn
			Gly 170	Gln
				Pro
				Glu
				Asn
				Asn 175
Lys	Thr	Thr	Pro	Pro
			180	Val
				Leu
			Asp	Ser
			185	Asp
				Gly
				Ser
				Phe
				Phe 190
				Leu
				Tyr
Ser	Lys	Leu	Thr	Val
				195
			Asp	Lys
			Ser	Arg
			200	Trp
				Gln
				Gln
				Gly 205
				Asn
				Val
				Phe
Ser	Cys	Ser	Val	Met
				His
				Glu 215
				Ala
				Leu
				His
				Asn
				His 220
				Tyr
				Thr
				Gln
				Lys
Ser	Leu	Ser	Leu	Ser
				225
				Pro
				Gly
				Lys
				230
<210>	48			
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<212>	PRT			
<213>	Artificial Sequence			
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<223>	48			
<400>	48			
Glu 1	Pro	Lys	Ser	Cys
				5
				Asp
				Lys
				Thr
				His
				Thr 10
				Cys
				Pro
				Pro
				Cys
				Pro 15
				Ala
Pro	Glu	Ala	Ala	Gly
				20
				Gly
				Pro
				Ser
				Val 25
				Phe
				Leu
				Phe
				Pro
				Pro 30
				Lys
				Pro
Lys	Asp	Thr	Leu	Met
				Ile
				Ser
				Arg
				40
				Thr
				Pro
				Glu
				Val
				Thr 45
				Cys
				Val
				Val
Val	Asp	Val	Ser	His
				Glu
				55
				Asp
				Pro
				Glu
				Val
				Lys
				Phe 60
				Asn
				Trp
				Tyr
				Val
Asp	Gly	Val	Glu	Val
				70
				His
				Asn
				Ala
				Lys
				Thr
				Lys 75
				Pro
				Arg
				Glu
				Glu
				Gln 80
Tyr	Asn	Ser	Thr	Tyr
				85
				Arg
				Val
				Val
				Ser
				Val 90
				Leu
				Thr
				Val
				Leu
				His
				95
				Gln
Asp	Trp	Leu	Asn	Gly
				100
				Lys
				Glu
				Tyr
				Lys 105
				Cys
				Lys
				Val
				Ser
				Asn
				110
				Lys
				Ala
Leu	Pro	Ala	Pro	Ile
				115
				Glu
				Lys
				Thr
				120
				Ile
				Ser
				Lys
				Ala
				Lys 125
				Gly
				Gln
				Pro

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

Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
145 150 155 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
165 170 175

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

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
195 200 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
210 215 220

Ser Leu Ser Leu Ser Pro Gly Lys
225 230

<210> 49
<211> 477
<212> PRT
<213> Artificial Sequence

<220>
<223> 49

<400> 49

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 Arg Ala Ser Gln Asp Ile Arg Asn
20 25 30

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

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

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

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

Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val
 115 120 125
 Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser
 130 135 140
 Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr Thr Met Asn Trp Val
 145 150 155 160
 Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Leu Ile Asn Pro
 165 170 175
 Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe Lys Asp Arg Phe Thr
 180 185 190
 Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser
 195 200 205
 Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gly Tyr
 210 215 220
 Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
 225 230 235 240
 Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
 245 250 255
 Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu
 260 265 270
 Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
 275 280 285
 Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
 290 295 300
 Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
 305 310 315 320
 Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
 325 330 335
 Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
 340 345 350
 Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
 355 360 365
 Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys
 370 375 380

Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys
385 390 395 400

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

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
420 425 430

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
435 440 445

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
450 455 460

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 50
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 50

<400> 50

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380
 Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 51
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 51

<400> 51

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380
 Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 52
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 52

<400> 52

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380
 Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 405 410 415
 Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
 420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 53
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 53

<400> 53

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380
 Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 405 410 415
 Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
 420 425 430
 Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 54
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 54

<400> 54

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380
 Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 405 410 415
 Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
 420 425 430
 Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 435 440 445
 Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 55
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 55

<400> 55

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380
 Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 405 410 415
 Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
 420 425 430
 Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 435 440 445
 Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 450 455 460
 Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 465 470 475

<210> 56
 <211> 478
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 56

<400> 56

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
 50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190

Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
245 250 255

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
260 265 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
275 280 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 57
<211> 478

<212> PRT
<213> Artificial Sequence

<220>
<223> 57

<400> 57

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
245 250 255

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
260 265 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
275 280 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 58

<211> 478

<212> PRT

<213> Artificial Sequence

<220>

<223> 58

<400> 58

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
180 185 190

Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
225 230 235 240

Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
245 250 255

Cys Pro Pro Cys₂₆₀ Pro Ala Pro Glu Ala₂₆₅ Ala Gly Gly Pro Ser₂₇₀ Val Phe
 Leu Phe Pro₂₇₅ Pro Lys Pro Lys Asp₂₈₀ Thr Leu Met Ile Ser₂₈₅ Arg Thr Pro
 Glu Val₂₉₀ Thr Cys Val Val Val₂₉₅ Asp Val Ser His Glu₃₀₀ Asp Pro Glu Val
 Lys₃₀₅ Phe Asn Trp Tyr Val₃₁₀ Asp Gly Val Glu Val₃₁₅ His Asn Ala Lys Thr₃₂₀
 Lys Pro Arg Glu Glu₃₂₅ Gln Tyr Asn Ser Thr₃₃₀ Tyr Arg Val Val Ser₃₃₅ Val
 Leu Thr Val Leu₃₄₀ His Gln Asp Trp Leu₃₄₅ Asn Gly Lys Glu Tyr₃₅₀ Lys Cys
 Lys Val Ser₃₅₅ Asn Lys Ala Leu Pro₃₆₀ Ala Pro Ile Glu Lys₃₆₅ Thr Ile Ser
 Lys Ala₃₇₀ Lys Gly Gln Pro Arg₃₇₅ Glu Pro Gln Val Cys Thr Leu Pro Pro
 Ser₃₈₅ Arg Asp Glu Leu Thr₃₉₀ Lys Asn Gln Val Ser₃₉₅ Leu Ser Cys Ala Val₄₀₀
 Lys Gly Phe Tyr Pro₄₀₅ Ser Asp Ile Ala Val₄₁₀ Glu Trp Glu Ser Asn₄₁₅ Gly
 Gln Pro Glu Asn₄₂₀ Asn Tyr Lys Thr Thr₄₂₅ Pro Pro Val Leu Asp Ser Asp
 Gly Ser Phe₄₃₅ Phe Leu Val Ser Lys₄₄₀ Leu Thr Val Asp Lys₄₄₅ Ser Arg Trp
 Gln Gln Gly Asn Val Phe Ser₄₅₅ Cys Ser Val Met His₄₆₀ Glu Ala Leu His
 Asn His Tyr Thr Gln Lys₄₇₀ Ser Leu Ser Leu Ser₄₇₅ Pro Gly Lys

<210> 59
 <211> 478
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> 59
 <400> 59

Asp Ile Val Leu Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
 20 25 30
 Gly Asp Ser Tyr Met Asn Trp Tyr Leu Gln Lys Pro Gly Gln Pro Pro
 35 40 45
 Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser
 65 70 75 80
 Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
275 280 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 60
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 60

<400> 60

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
 20 25 30
 Gly Asp Ser Tyr Met Asn Trp Tyr Leu Gln Lys Pro Gly Gln Pro Pro
 35 40 45
 Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser
 65 70 75 80
 Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 61

<211> 478

<212> PRT

<213> Artificial Sequence

<220>

<223> 61

<400> 61

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

Gly Asp Ser Tyr Met Asn Trp Tyr Leu Gln Lys Pro Gly Gln Pro Pro
 35 40 45
 Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Val Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser
 65 70 75 80
 Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 62
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 62

<400> 62

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
 50 55 60

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160

Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Asp
 165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190

Arg Val Thr Met Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240

Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 63
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 63

<400> 63

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser
 65 70 75 80
 Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 64
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 64
<400> 64

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln Ser Lys
 85 90 95
 Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 65
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 65
<400> 65

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

Gln Pro Ala Ser Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

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

Gln Leu Leu Ile Tyr Ala Ala Ser Thr Leu His Ser Gly Ile Pro Asp
50 55 60

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

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

Glu Asp Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly
 100 105 110
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Thr Val Asp Lys Ser Ile Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Val Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 66
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 66

<400> 66

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

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

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125
 Leu Leu Gln Gln Ser Gly Pro Glu Val Val Lys Pro Gly Ala Ser Val
 130 135 140
 Lys Ile Thr Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160
 Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile Gly Asp
 165 170 175
 Ile Asn Pro Asn Asn Ala Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190
 Arg Val Thr Leu Ile Val Asp Lys Ser Ser Ser Thr Ala Tyr Met Glu
 195 200 205
 Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220
 Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240
 Thr Leu Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 67
<211> 478
<212> PRT
<213> Artificial Sequence

<220>
<223> 67

<400> 67

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

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

Ala Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

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

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

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

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Leu Leu Gln Gln Ser Gly Pro Glu Val Val Lys Pro Gly Ala Ser Val
 130 135 140

Lys Ile Thr Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
 145 150 155 160

Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile Gly Asp
 165 170 175

Ile Asn Pro Asn Asn Gly Gly Thr Leu Tyr Asn Gln Lys Phe Arg Gly
 180 185 190

Arg Val Thr Leu Ile Val Asp Lys Ser Ser Ser Thr Ala Tyr Met Glu
 195 200 205

Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220

Ser Glu Val Phe Tyr Gly Asn Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
 225 230 235 240

Thr Leu Thr Val Ser Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 245 250 255

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
 260 265 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 275 280 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 290 295 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 305 310 315 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 325 330 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 340 345 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 355 360 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
 370 375 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
 385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 68
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> 68

<400> 68

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly
20

<210> 69
<211> 1449
<212> DNA
<213> Artificial Sequence

<220>
<223> 69

<400> 69

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60

acctgcaggt cctccaccgg cgccgtgacc acctccaact acgccaactg ggtgcagcag
120

aagccccggcc agggccccag gggcctgata ggcggcacca acaagagggc cccctggacc
180

cccgccaggt tctccggctc cctgctgggc ggcaaggccg ccctgaccat caccggcgcc
240

caggccgagg acgaggccga ctactactgc gccctgtggt actccaacct gtgggtgttc
300

ggcggcggca ccaagctgac cgtgctgggc ggaggcgggt gatcaggcgg aggtggctca
360

ggtggaggcg gttctgaggt gcagctggtg gagtccggcg gcggcctggt gcagcccggc

420

ggctccctga ggctgtcctg cgccgcctcc ggcttcacct tcaacaccta cgccatgaac
480

tgggtgaggc agggccccgg caagggcctg gagtgggtgg ccaggatcag gtccaagtac
540

aacaactacg ccacctacta cgccgactcc gtgaaggaca ggttcaccat ctccagggac
600

gactccaaga actccctgta cctgcagatg aactccctga agaccgagga caccgccgtg
660

tactactgcg tgaggcacgg caacttcggc aactcctacg tgtcctgggt cgcctactgg
720

ggccagggca ccctgggtgac cgtgtcctcc gagcccaagt cctgcgacaa gaccacacc
780

tgccccccct gccccgcccc cgaggccgcc ggcgggcccct ccgtgttcct gttcccccc
840

aagcccaagg acaccctgat gatctccagg acccccgagg tgacctgcgt ggtggtggac
900

gtgtcccacg aggaccccga ggtgaagttc aactggtacg tggacggcgt ggaggtgcac
960

aacgccaaga ccaagcccag ggaggagcag tacaactcca cctacagggt ggtgtccgtg
1020

ctgaccgtgc tgcaccagga ctggctgaac ggcaaggagt acaagtgcaa ggtgtccaac
1080

aaggccctgc ccgcccccat cgagaagacc atctccaagg ccaagggcca gccagggag
1140

ccccagggtg acaccctgcc cccctgcagg gacgagctga ccaagaacca ggtgtccctg
1200

tgggtgcctgg tgaagggctt ctaccctcc gacatcgccg tggagtggga gtccaacggc
1260

cagccccgaga acaactacaa gaccaccccc cccgtgctgg actccgacgg ctccttcttc
1320

ctgtactcca agctgaccgt ggacaagtcc aggtggcagc agggcaacgt gttctcctgc
1380

tccgtgatgc acgaggccct gcacaaccac tacaccaga agtccctgtc cctgtcccc
1440

ggcaagtaa
1449

<210> 70
<211> 1437
<212> DNA
<213> Artificial Sequence

<220>
<223> 70

<400> 70
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60

atcaactgca aggcctccca gtccgtggac tacgacggcg actcctacat gaactggtag
120
cagcagaagc ccggccagcc cccaagctg ctgatctacg ccgcctccac cctgcactcc
180
ggcgtgcccc acaggttctc cggctccggc tccggcaccg acttcaccct gaccatctcc
240
tccctgcagg ccgaggacgt ggccgtgtac tactgccagc agtccaagga ggaccccagg
300
accttcggcc agggcaccaa gctggagatc aaggaggcg gtggatcagg cggaggtggc
360
tcaggtggag gcggttctga ggtgcagctg gtgcagtccg gcgccgaggt gaagaagccc
420
ggcgccctccg tgaaggtgtc ctgcaaggcc tccggctaca ctttcaccga ctacaacatg
480
gactgggtga ggcaggcccc cggccagggc ctggagtga tgggcgacat caacccaac
540
aacggcggca ccctgtacaa ccagaagttc aggggcaggg tgaccatgac cgtggacacc
600
tccatctcca ccgcctacat ggagctgtcc aggctgaggt ccgacgacac cgccgtgtac
660
tactgcgcca ggtccgaggt gttctacggc aactacgccg actactgggg ccagggcacc
720
accgtgaccg tgtcctccga gcccaagtcc tgcgacaaga cccacacctg cccccctgc
780
cccgcccccg aggccgccgg cggcccctcc gtgttcctgt tccccccaa gcccaaggac
840
accctgatga tctccaggac ccccgagggt acctgcgtgg tgggtggacgt gtcccacgag
900
gaccccgagg tgaagttcaa ctggtacgtg gacggcgtgg aggtgcacaa cgccaagacc
960
aagcccaggg aggagcagta caactccacc tacagggtgg tgtccgtgct gaccgtgctg
1020
caccaggact ggctgaacgg caaggagtac aagtgaagg tgtccaacaa ggccctgccc
1080
gcccccatcg agaagaccat ctccaaggcc aagggccagc ccaggagacc ccaggtgtgc
1140
accctgcccc cctccaggga cgagctgacc aagaaccagg tgtccctgtc ctgcgccgtg
1200
aagggttctt acccctccga catcgccgtg gagtgggagt ccaacggcca gcccgagaac
1260
aactacaaga ccaccccccc cgtgctggac tccgacggct cttcttcct ggtgtccaag
1320
ctgaccgtgg acaagtccag gtggcagcag ggcaacgtgt tctcctgctc cgtgatgcac
1380

gaggccctgc acaaccacta caccagaag tccctgtccc tgtcccccg caagtaa
1437

<210> 71
<211> 1437
<212> DNA
<213> Artificial Sequence

<220>
<223> 71

<400> 71
gacatcgtgc tgaccagtc ccccgactcc ctggccgtgt ccctgggcga gagggccacc
60

atcaactgca aggcctccca gtccgtggac tacgacggcg actcctacat gaactggtac
120

cagcagaagc ccggccagcc cccaagctg ctgatctacg ccgcctccac cctgcactcc
180

ggcgtgcccc acaggttctc cggctccggc tccggcaccg acttcaccct gaccatctcc
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<212> DNA

<213> Artificial Sequence

<220>

<223> 72

<400> 72

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<212> DNA

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<223> 73

<400> 73

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<400> 76

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1200

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1260

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ctgaccgtgg acaagtccag gtggcagcag ggcaacgtgt tctcctgctc cgtgatgcac
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1437

<210> 81

<211> 1437

<212> DNA

<213> Artificial Sequence

<220>

<223> 81

<400> 81

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120

ctgcagaagc ccggccagcc ccccagctg ctgatctacg ccgcctccac cctgcactcc
180

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960

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<211> 1437

<212> DNA

<213> Artificial Sequence

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<223> 82

<400> 82

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300

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<223> 83

<400> 83

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<400> 85

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<400> 86

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<220>
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<400> 88
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