

SEQUENCE LISTING

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 Guo, Nan

<120> Anti-SIRP-alpha antibodies and bi-specific macrophage
 enhancing antibodies

<130> STAN-1093W0

<150> 61/951,226

<151> 2014-03-11

<160> 19

<170> PatentIn version 3.5

<210> 1

<211> 113

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic amino acid sequence

<400> 1

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

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

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

Gln	Asp	Lys	Ala	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Ser	Asn	Thr	Ala	Tyr
65					70					75					80

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

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

Ser

<210> 2
<211> 8
<212> PRT
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<400> 2

Gly Phe Asn Ile Lys Asp Tyr Tyr
1 5

<210> 3
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<400> 3

Ile Asp Pro Glu Asp Gly Glu Thr
1 5

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<400> 4

Ala Arg Trp Gly Ala Tyr
1 5

<210> 5

<211> 108

<212> PRT

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<400> 5

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

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

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

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

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65 70 75 80

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

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

<210> 6

<211> 7

<212> PRT

<213> Artificial sequence

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<400> 6

Ser Ser Val Ser Ser Ser Tyr
1 5

<210> 7

<211> 3

<212> PRT

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<400> 7

Ser Thr Ser
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<210> 8

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<212> PRT

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<400> 8

His Gln Trp Ser Ser Tyr Pro Arg Thr
1 5

<210> 9

<211> 235

<212> PRT

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<220>

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<400> 9

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

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

Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro Arg
210 215 220

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
225 230 235

<210> 10

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<212> PRT

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

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

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

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

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65 70 75 80

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

Arg Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Gly Thr Thr Ala
100 105 110

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

115

120

125

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

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

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

Pro Glu Asp Gly Glu Thr Lys Tyr Ala Pro Lys Phe Gln Asp Lys Ala
 180 185 190

Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr Leu His Leu Ser
 195 200 205

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

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
 225 230 235

<210> 11

<211> 216

<212> PRT

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<400> 11

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

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

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

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

Gln Asp Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80

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

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

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

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

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

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

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

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

Lys Lys Val Glu Pro Lys Ser Cys
210 215

<211> 215
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<400> 12

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

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

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

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

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65 70 75 80

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

Arg Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Thr Val Ala
100 105 110

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 13

<211> 240

<212> PRT

<213> Artificial sequence

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<223> Synthetic amino acid sequence

<400> 13

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

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

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

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

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

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

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

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

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

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

Ile His Trp Val Gln Gln Arg Thr Glu Gln Gly Leu Glu Trp Ile Gly
165 170 175

Arg Ile Asp Pro Glu Asp Gly Glu Thr Lys Tyr Ala Pro Lys Phe Gln
180 185 190

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

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

Arg Trp Gly Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235 240

<210> 14
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<223> Synthetic amino acid sequence

<400> 14

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

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

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
35 40 45

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

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

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Thr Ser Asn Pro Pro Thr
85 90 95

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

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
115 120 125

Glu Lys Val Thr Leu Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Ser
130 135 140

Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
145 150 155 160

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
165 170 175

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
180 185 190

Ala Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro
195 200 205

Arg Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
210 215 220

<210> 15
<211> 239
<212> PRT
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<400> 15

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 Asn Ile Lys Asp Thr
20 25 30

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

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

Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr 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

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

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

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

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

His Trp Val Gln Gln Arg Thr Glu Gln Gly Leu Glu Trp Ile Gly Arg
165 170 175

Ile Asp Pro Glu Asp Gly Glu Thr Lys Tyr Ala Pro Lys Phe Gln Asp
180 185 190

Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr Leu His
195 200 205

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

Trp Gly Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235

<210> 16

<211> 221

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic amino acid sequence

<400> 16

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 Asp Val Asn Thr Ala
20 25 30

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

Tyr Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly

50

55

60

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

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

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

Pro Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro
115 120 125

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

Ser Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu
145 150 155 160

Trp Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe
165 170 175

Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met
180 185 190

Glu Ala Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr
195 200 205

Pro Arg Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
210 215 220

<210> 17

<211> 237

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic amino acid sequence

<400> 17

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

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

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

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

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

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

Ala Arg Met Arg Lys Gly Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr
100 105 110

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

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

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

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

Pro Glu Asp Gly Glu Thr Lys Tyr Ala Pro Lys Phe Gln Asp Lys Ala

180

185

190

Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr Leu His Leu Ser
195 200 205

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

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235

<210> 18

<211> 226

<212> PRT

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<400> 18

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ile Ile Ile His Ser
20 25 30

Asp Gly Asn Thr Tyr Leu Glu Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

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

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

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

Ser His Val Pro His Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg Thr Val Ala Ala Pro Gln Ile Val Leu Thr Gln Ser Pro Ala Ile
115 120 125

Met Ser Ala Ser Pro Gly Glu Lys Val Thr Leu Thr Cys Ser Ala Ser
130 135 140

Ser Ser Val Ser Ser Ser Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly
145 150 155 160

Ser Ser Pro Lys Leu Trp Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly
165 170 175

Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu
180 185 190

Thr Ile Ser Ser Met Glu Ala Glu Asp Ala Ala Ser Tyr Phe Cys His
195 200 205

Gln Trp Ser Ser Tyr Pro Arg Thr Phe Gly Ala Gly Thr Lys Leu Glu
210 215 220

Leu Lys
225

<210> 19
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic amino acid sequence

<400> 19

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

