

SEQUENCE LISTING

<110> Icosavax, Inc.
Lien, Hans R.
Richardson, Charles

<120> METHOD OF MAKING VIRUS-LIKE PARTICLE

<130> ICVX-008/01W0 333041-2061

<150> US 63/036,535

<151> 2020-06-09

<160> 62

<170> PatentIn version 3.5

<210> 1

<211> 206

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 1

Glu	Gly	Met	Asp	Pro	Leu	Ala	Val	Leu	Ala	Glu	Ser	Arg	Leu	Leu	Pro
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Leu	Leu	Thr	Val	Arg	Gly	Gly	Glu	Asp	Leu	Ala	Gly	Leu	Ala	Thr	Val
			20					25					30		

Leu	Glu	Leu	Met	Gly	Val	Gly	Ala	Leu	Glu	Ile	Thr	Leu	Arg	Thr	Glu
		35					40						45		

Lys	Gly	Leu	Glu	Ala	Leu	Lys	Ala	Leu	Arg	Lys	Ser	Gly	Leu	Leu	Leu
	50					55					60				

Gly	Ala	Gly	Thr	Val	Arg	Ser	Pro	Lys	Glu	Ala	Glu	Ala	Ala	Leu	Glu
65					70					75					80

Ala	Gly	Ala	Ala	Phe	Leu	Val	Ser	Pro	Gly	Leu	Leu	Glu	Glu	Val	Ala
				85					90					95	

Ala Leu Ala Gln Ala Arg Gly Val Pro Tyr Leu Pro Gly Val Leu Thr
100 105 110

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

Phe Phe Pro Ala Glu Pro Phe Gln Gly Val Arg Val Leu Arg Ala Tyr
130 135 140

Ala Glu Val Phe Pro Glu Val Arg Phe Leu Pro Thr Gly Gly Ile Lys
145 150 155 160

Glu Glu His Leu Pro His Tyr Ala Ala Leu Pro Asn Leu Leu Ala Val
165 170 175

Gly Gly Ser Trp Leu Leu Gln Gly Asp Leu Ala Ala Val Met Lys Lys
180 185 190

Val Lys Ala Ala Lys Ala Leu Leu Ser Pro Gln Ala Pro Gly
195 200 205

<210> 2
<211> 155
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 2

Thr Lys Lys Val Gly Ile Val Asp Thr Thr Phe Ala Arg Val Asp Met
1 5 10 15

Ala Glu Ala Ala Ile Arg Thr Leu Lys Ala Leu Ser Pro Asn Ile Lys
20 25 30

Ile Ile Arg Lys Thr Val Pro Gly Ile Lys Asp Leu Pro Val Ala Cys
35 40 45

Lys Lys Leu Leu Glu Glu Glu Gly Cys Asp Ile Val Met Ala Leu Gly
50 55 60

Met Pro Gly Lys Ala Glu Lys Asp Lys Val Cys Ala His Glu Ala Ser
65 70 75 80

Leu Gly Leu Met Leu Ala Gln Leu Met Thr Asn Lys His Ile Ile Glu
85 90 95

Val Phe Val His Glu Asp Glu Ala Lys Asp Asp Asp Glu Leu Asp Ile
100 105 110

Leu Ala Leu Val Arg Ala Ile Glu His Ala Ala Asn Val Tyr Tyr Leu
115 120 125

Leu Phe Lys Pro Glu Tyr Leu Thr Arg Met Ala Gly Lys Gly Leu Arg
130 135 140

Gln Gly Arg Glu Asp Ala Gly Pro Ala Arg Glu
145 150 155

<210> 3
<211> 155
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 3

Thr Lys Lys Val Gly Ile Val Asp Thr Thr Phe Ala Arg Val Asp Met
1 5 10 15

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

Ile Ile Arg Lys Thr Val Pro Gly Ile Lys Asp Leu Pro Val Ala Cys
35 40 45

Lys Lys Leu Leu Glu Glu Glu Gly Cys Asp Ile Val Met Ala Leu Gly
50 55 60

Met Pro Gly Lys Ala Glu Lys Asp Lys Val Cys Ala His Glu Ala Ser
65 70 75 80

Leu Gly Leu Met Leu Ala Gln Leu Met Thr Asn Lys His Ile Ile Glu
85 90 95

Val Phe Val His Glu Asp Glu Ala Lys Asp Asp Ala Glu Leu Lys Ile
100 105 110

Leu Ala Ala Arg Arg Ala Ile Glu His Ala Leu Asn Val Tyr Tyr Leu
115 120 125

Leu Phe Lys Pro Glu Tyr Leu Thr Arg Met Ala Gly Lys Gly Leu Arg
130 135 140

Gln Gly Phe Glu Asp Ala Gly Pro Ala Arg Glu
145 150 155

<210> 4
<211> 208
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 4

Ser Thr Ile Asn Asn Gln Leu Lys Ala Leu Lys Val Ile Pro Val Ile
1 5 10 15

Ala Ile Asp Asn Ala Glu Asp Ile Ile Pro Leu Gly Lys Val Leu Ala
20 25 30

Glu Asn Gly Leu Pro Ala Ala Glu Ile Thr Phe Arg Ser Ser Ala Ala
35 40 45

Val Lys Ala Ile Met Leu Leu Arg Ser Ala Gln Pro Glu Met Leu Ile
50 55 60

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

Ala Gly Ala Thr Phe Val Val Ser Pro Gly Phe Asn Pro Asn Thr Val
85 90 95

Arg Ala Cys Gln Ile Ile Gly Ile Asp Ile Val Pro Gly Val Asn Asn
100 105 110

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

Phe Phe Pro Ala Glu Ala Ser Gly Gly Ile Ser Met Val Lys Ser Leu
130 135 140

Val Gly Pro Tyr Gly Asp Ile Arg Leu Met Pro Thr Gly Gly Ile Thr
145 150 155 160

Pro Ser Asn Ile Asp Asn Tyr Leu Ala Ile Pro Gln Val Leu Ala Cys
165 170 175

Gly Gly Thr Trp Met Val Asp Lys Lys Leu Val Thr Asn Gly Glu Trp
180 185 190

Asp Glu Ile Ala Arg Leu Thr Arg Glu Ile Val Glu Gln Val Asn Pro
195 200 205

<210> 5
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 5

Pro Ile Phe Thr Leu Asn Thr Asn Ile Lys Ala Thr Asp Val Pro Ser
1 5 10 15

Asp Phe Leu Ser Leu Thr Ser Arg Leu Val Gly Leu Ile Leu Ser Lys
20 25 30

Pro Gly Ser Tyr Val Ala Val His Ile Asn Thr Asp Gln Gln Leu Ser
35 40 45

Phe Gly Gly Ser Thr Asn Pro Ala Ala Phe Gly Thr Leu Met Ser Ile
50 55 60

Gly Gly Ile Glu Pro Ser Lys Asn Arg Asp His Ser Ala Val Leu Phe
65 70 75 80

Asp His Leu Asn Ala Met Leu Gly Ile Pro Lys Asn Arg Met Tyr Ile
85 90 95

His Phe Val Asn Leu Asn Gly Asp Asp Val Gly Trp Asn Gly Thr Thr
100 105 110

Phe

<210> 6

<211> 156

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 6

Asn Gln His Ser His Lys Asp Tyr Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Asp Ile Val Asp Ala Cys Val Glu Ala Phe
20 25 30

Glu Ile Ala Met Ala Ala Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Ser Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Arg Tyr Arg Asp Ser Ala Glu His His Arg Phe
115 120 125

Phe Ala Ala His Phe Ala Val Lys Gly Val Glu Ala Ala Arg Ala Cys
130 135 140

Ile Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 7
<211> 203
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 7

Met Glu Glu Leu Phe Lys Lys His Lys Ile Val Ala Val Leu Arg Ala
1 5 10 15

Asn Ser Val Glu Glu Ala Ile Glu Lys Ala Val Ala Val Phe Ala Gly
20 25 30

Gly Val His Leu Ile Glu Ile Thr Phe Thr Val Pro Asp Ala Asp Thr
35 40 45

Val Ile Lys Ala Leu Ser Val Leu Lys Glu Lys Gly Ala Ile Ile Gly
50 55 60

Ala Gly Thr Val Thr Ser Val Glu Gln Cys Arg Lys Ala Val Glu Ser
65 70 75 80

Gly Ala Glu Phe Ile Val Ser Pro His Leu Asp Glu Glu Ile Ser Gln
85 90 95

Phe Cys Lys Glu Lys Gly Val Phe Tyr Met Pro Gly Val Met Thr Pro
100 105 110

Thr Glu Leu Val Lys Ala Met Lys Leu Gly His Thr Ile Leu Lys Leu
115 120 125

Phe Pro Gly Glu Val Val Gly Pro Gln Phe Val Lys Ala Met Lys Gly
130 135 140

Pro Phe Pro Asn Val Lys Phe Val Pro Thr Gly Gly Val Asn Leu Asp
145 150 155 160

Asn Val Cys Glu Trp Phe Lys Ala Gly Val Leu Ala Val Gly Val Gly
165 170 175

Ser Ala Leu Val Lys Gly Thr Pro Asp Glu Val Arg Glu Lys Ala Lys
180 185 190

Ala Phe Val Glu Lys Ile Arg Gly Cys Thr Glu
195 200

<210> 8

<211> 156

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 8

Asn Gln His Ser His Lys Asp Tyr Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Glu Ile Val Asp Ala Cys Val Ser Ala Phe
20 25 30

Glu Ala Ala Met Ala Asp Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Ser Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Arg Tyr Arg Asp Ser Asp Ala His Thr Leu Leu
115 120 125

Phe Leu Ala Leu Phe Ala Val Lys Gly Met Glu Ala Ala Arg Ala Cys
130 135 140

Val Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 9

<211> 176

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 9

Phe Thr Lys Ser Gly Asp Asp Gly Asn Thr Asn Val Ile Asn Lys Arg
1 5 10 15

Val Gly Lys Asp Ser Pro Leu Val Asn Phe Leu Gly Asp Leu Asp Glu
20 25 30

Leu Asn Ser Phe Ile Gly Phe Ala Ile Ser Lys Ile Pro Trp Glu Asp
35 40 45

Met Lys Lys Asp Leu Glu Arg Val Gln Val Glu Leu Phe Glu Ile Gly
50 55 60

Glu Asp Leu Ser Thr Gln Ser Ser Lys Lys Lys Ile Asp Glu Ser Tyr
65 70 75 80

Val Leu Trp Leu Leu Ala Ala Thr Ala Ile Tyr Arg Ile Glu Ser Gly
85 90 95

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

Leu His Val Thr Arg Ser Val Ala Arg Arg Val Glu Arg Asn Ala Val
115 120 125

Lys Tyr Thr Lys Glu Leu Pro Glu Ile Asn Arg Met Ile Ile Val Tyr
130 135 140

Leu Asn Arg Leu Ser Ser Leu Leu Phe Ala Met Ala Leu Val Ala Asn
145 150 155 160

Lys Arg Arg Asn Gln Ser Glu Lys Ile Tyr Glu Ile Gly Lys Ser Trp
165 170 175

<210> 10

<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 10

Asn Gln His Ser His Lys Asp Tyr Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Asp Ile Val Asp Gln Cys Val Arg Ala Phe
20 25 30

Glu Glu Ala Met Ala Asp Ala Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Ser Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Arg Tyr Arg Ser Ser Arg Glu His His Glu Phe
115 120 125

Phe Arg Glu His Phe Met Val Lys Gly Val Glu Ala Ala Ala Ala Cys
130 135 140

Ile Thr Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 11

<211> 200
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 11

Gly His Thr Lys Gly Pro Thr Pro Gln Gln His Asp Gly Ser Ala Leu
1 5 10 15

Arg Ile Gly Ile Val His Ala Arg Trp Asn Lys Thr Ile Ile Met Pro
20 25 30

Leu Leu Ile Gly Thr Ile Ala Lys Leu Leu Glu Cys Gly Val Lys Ala
35 40 45

Ser Asn Ile Val Val Gln Ser Val Pro Gly Ser Trp Glu Leu Pro Ile
50 55 60

Ala Val Gln Arg Leu Tyr Ser Ala Ser Gln Leu Gln Thr Pro Ser Ser
65 70 75 80

Gly Pro Ser Leu Ser Ala Gly Asp Leu Leu Gly Ser Ser Thr Thr Asp
85 90 95

Leu Thr Ala Leu Pro Thr Thr Thr Ala Ser Ser Thr Gly Pro Phe Asp
100 105 110

Ala Leu Ile Ala Ile Gly Val Leu Ile Lys Gly Glu Thr Met His Phe
115 120 125

Glu Tyr Ile Ala Asp Ser Val Ser His Gly Leu Met Arg Val Gln Leu
130 135 140

Asp Thr Gly Val Pro Val Ile Phe Gly Val Leu Thr Val Leu Thr Asp
145 150 155 160

Asp Gln Ala Lys Ala Arg Ala Gly Val Ile Glu Gly Ser His Asn His

165

170

175

Gly Glu Asp Trp Gly Leu Ala Ala Val Glu Met Gly Val Arg Arg Arg
 180 185 190

Asp Trp Ala Ala Gly Lys Thr Glu
 195 200

<210> 12

<211> 236

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 12

Tyr Glu Val Asp His Ala Asp Val Tyr Asp Leu Phe Tyr Leu Gly Arg
 1 5 10 15

Gly Lys Asp Tyr Ala Ala Glu Ala Ser Asp Ile Ala Asp Leu Val Arg
 20 25 30

Ser Arg Thr Pro Glu Ala Ser Ser Leu Leu Asp Val Ala Cys Gly Thr
 35 40 45

Gly Thr His Leu Glu His Phe Thr Lys Glu Phe Gly Asp Thr Ala Gly
 50 55 60

Leu Glu Leu Ser Glu Asp Met Leu Thr His Ala Arg Lys Arg Leu Pro
 65 70 75 80

Asp Ala Thr Leu His Gln Gly Asp Met Arg Asp Phe Gln Leu Gly Arg
 85 90 95

Lys Phe Ser Ala Val Val Ser Met Phe Ser Ser Val Gly Tyr Leu Lys
 100 105 110

Thr Val Ala Glu Leu Gly Ala Ala Val Ala Ser Phe Ala Glu His Leu

115

120

125

Glu Pro Gly Gly Val Val Val Val Glu Pro Trp Trp Phe Pro Glu Thr
 130 135 140

Phe Ala Asp Gly Trp Val Ser Ala Asp Val Val Arg Arg Asp Gly Arg
 145 150 155 160

Thr Val Ala Arg Val Ser His Ser Val Arg Glu Gly Asn Ala Thr Arg
 165 170 175

Met Glu Val His Phe Thr Val Ala Asp Pro Gly Lys Gly Val Arg His
 180 185 190

Phe Ser Asp Val His Leu Ile Thr Leu Phe His Gln Arg Glu Tyr Glu
 195 200 205

Ala Ala Phe Met Ala Ala Gly Leu Arg Val Glu Tyr Leu Glu Gly Gly
 210 215 220

Pro Ser Gly Arg Gly Leu Phe Val Gly Val Pro Ala
 225 230 235

<210> 13
 <211> 137
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Peptide

<400> 13

Gly Met Lys Glu Lys Phe Val Leu Ile Ile Thr His Gly Asp Phe Gly
 1 5 10 15

Lys Gly Leu Leu Ser Gly Ala Glu Val Ile Ile Gly Lys Gln Glu Asn
 20 25 30

Val His Thr Val Gly Leu Asn Leu Gly Asp Asn Ile Glu Lys Val Ala

35

40

45

Lys Glu Val Met Arg Ile Ile Ile Ala Lys Leu Ala Glu Asp Lys Glu
 50 55 60

Ile Ile Ile Val Val Asp Leu Phe Gly Gly Ser Pro Phe Asn Ile Ala
 65 70 75 80

Leu Glu Met Met Lys Thr Phe Asp Val Lys Val Ile Thr Gly Ile Asn
 85 90 95

Met Pro Met Leu Val Glu Leu Leu Thr Ser Ile Asn Val Tyr Asp Thr
 100 105 110

Thr Glu Leu Leu Glu Asn Ile Ser Lys Ile Gly Lys Asp Gly Ile Lys
 115 120 125

Val Ile Glu Lys Ser Ser Leu Lys Met
 130 135

<210> 14

<211> 153

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 14

Lys Tyr Asp Gly Ser Lys Leu Arg Ile Gly Ile Leu His Ala Arg Trp
 1 5 10 15

Asn Leu Glu Ile Ile Ala Ala Leu Val Ala Gly Ala Ile Lys Arg Leu
 20 25 30

Gln Glu Phe Gly Val Lys Ala Glu Asn Ile Ile Ile Glu Thr Val Pro
 35 40 45

Gly Ser Phe Glu Leu Pro Tyr Gly Ser Lys Leu Phe Val Glu Lys Gln

50

55

60

Lys Arg Leu Gly Lys Pro Leu Asp Ala Ile Ile Pro Ile Gly Val Leu
65 70 75 80

Ile Lys Gly Ser Thr Met His Phe Glu Tyr Ile Cys Asp Ser Thr Thr
85 90 95

His Gln Leu Met Lys Leu Asn Phe Glu Leu Gly Ile Pro Val Ile Phe
100 105 110

Gly Val Leu Thr Cys Leu Thr Asp Glu Gln Ala Glu Ala Arg Ala Gly
115 120 125

Leu Ile Glu Gly Lys Met His Asn His Gly Glu Asp Trp Gly Ala Ala
130 135 140

Ala Val Glu Met Ala Thr Lys Phe Asn
145 150

<210> 15
<211> 163
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 15

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

Leu Arg Ile Gly Ile Leu His Ala Arg Trp Asn Arg Lys Ile Ile Leu
20 25 30

Ala Leu Val Ala Gly Ala Val Leu Arg Leu Leu Glu Phe Gly Val Lys
35 40 45

Ala Glu Asn Ile Ile Ile Glu Thr Val Pro Gly Ser Phe Glu Leu Pro

50

55

60

Tyr Gly Ser Lys Leu Phe Val Glu Lys Gln Lys Arg Leu Gly Lys Pro
65 70 75 80

Leu Asp Ala Ile Ile Pro Ile Gly Val Leu Ile Lys Gly Ser Thr Met
85 90 95

His Phe Glu Tyr Ile Cys Asp Ser Thr Thr His Gln Leu Met Lys Leu
100 105 110

Asn Phe Glu Leu Gly Ile Pro Val Ile Phe Gly Val Leu Thr Cys Leu
115 120 125

Thr Asp Glu Gln Ala Glu Ala Arg Ala Gly Leu Ile Glu Gly Lys Met
130 135 140

His Asn His Gly Glu Asp Trp Gly Ala Ala Ala Val Glu Met Ala Thr
145 150 155 160

Lys Phe Asn

<210> 16

<211> 174

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 16

Gly Ala Asn Trp Tyr Leu Asp Asn Glu Ser Ser Arg Leu Ser Phe Thr
1 5 10 15

Ser Thr Lys Asn Ala Asp Ile Ala Glu Val His Arg Phe Leu Val Leu
20 25 30

His Gly Lys Val Asp Pro Lys Gly Leu Ala Glu Val Glu Val Glu Thr

35

40

45

Glu Ser Ile Ser Thr Gly Ile Pro Leu Arg Asp Met Leu Leu Arg Val
 50 55 60

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

Leu Asp Met Arg Pro Ile Asn Asn Leu Ala Pro Gly Ala Gln Leu Glu
 85 90 95

Leu Arg Leu Pro Leu Thr Val Ser Leu Arg Gly Lys Ser His Ser Tyr
 100 105 110

Asn Ala Glu Leu Leu Ala Thr Arg Leu Asp Glu Arg Arg Phe Gln Val
 115 120 125

Val Thr Leu Glu Pro Leu Val Ile His Ala Gln Asp Phe Asp Met Val
 130 135 140

Arg Ala Phe Asn Ala Leu Arg Leu Val Ala Gly Leu Ser Ala Val Ser
 145 150 155 160

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

<210> 17

<211> 207

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 17

Thr Asp Tyr Ile Arg Asp Gly Ser Ala Ile Lys Ala Leu Ser Phe Ala
 1 5 10 15

Ile Ile Leu Ala Glu Ala Asp Leu Arg His Ile Pro Gln Asp Leu Gln

20

25

30

Arg Leu Ala Val Arg Val Ile His Ala Cys Gly Met Val Asp Val Ala
 35 40 45

Asn Asp Leu Ala Phe Ser Glu Gly Ala Gly Lys Ala Gly Arg Asn Ala
 50 55 60

Leu Leu Ala Gly Ala Pro Ile Leu Cys Asp Ala Arg Met Val Ala Glu
 65 70 75 80

Gly Ile Thr Arg Ser Arg Leu Pro Ala Asp Asn Arg Val Ile Tyr Thr
 85 90 95

Leu Ser Asp Pro Ser Val Pro Glu Leu Ala Lys Lys Ile Gly Asn Thr
 100 105 110

Arg Ser Ala Ala Ala Leu Asp Leu Trp Leu Pro His Ile Glu Gly Ser
 115 120 125

Ile Val Ala Ile Gly Asn Ala Pro Thr Ala Leu Phe Arg Leu Phe Glu
 130 135 140

Leu Leu Asp Ala Gly Ala Pro Lys Pro Ala Leu Ile Ile Gly Met Pro
 145 150 155 160

Val Gly Phe Val Gly Ala Ala Glu Ser Lys Asp Glu Leu Ala Ala Asn
 165 170 175

Ser Arg Gly Val Pro Tyr Val Ile Val Arg Gly Arg Arg Gly Gly Ser
 180 185 190

Ala Met Thr Ala Ala Ala Val Asn Ala Leu Ala Ser Glu Arg Glu
 195 200 205

<210> 18

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 18

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

Leu Ala Glu Val Ile Tyr Ser Ser Leu His Leu Gly Leu Asp Ile Pro
20 25 30

Lys Gly Lys His Ala Ile Arg Phe Leu Cys Leu Glu Lys Glu Asp Phe
35 40 45

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

Leu Met Ala Gly Arg Ser Glu Glu Thr Lys Met Leu Leu Ile Phe Leu
65 70 75 80

Leu Phe Ile Ala Leu Glu Arg Lys Leu Gly Ile Arg Ala His Asp Val
85 90 95

Glu Ile Thr Ile Lys Glu Gln Pro Ala His Cys Trp Gly Phe Arg Gly
100 105 110

Arg Thr Gly Asp Ser Ala Arg Asp Leu Asp Tyr Asp Ile Tyr Val
115 120 125

<210> 19

<211> 234

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 19

Gly Ser Asp Leu Gln Lys Leu Gln Arg Phe Ser Thr Cys Asp Ile Ser

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

Val Ser Glu Ala Ile Lys Asn Gly Leu Pro Ala Lys Ala Ala Gln Thr
210 215 220

Ala Arg Arg Met Val Leu Lys Asp Tyr Ile
225 230

<210> 20
<211> 161
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 20

Ser Gly Met Arg Val Tyr Leu Gly Ala Asp His Ala Gly Tyr Glu Leu
1 5 10 15

Lys Gln Ala Ile Ile Ala Phe Leu Lys Met Thr Gly His Glu Pro Ile
20 25 30

Asp Cys Gly Ala Leu Arg Tyr Asp Ala Asp Asp Asp Tyr Pro Ala Phe
35 40 45

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

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

Val Pro Gly Ala Arg Cys Ala Leu Ala Trp Ser Val Gln Thr Ala Ala
85 90 95

Leu Ala Arg Glu His Asn Asn Ala Gln Leu Ile Gly Ile Gly Gly Arg
100 105 110

Met His Thr Leu Glu Glu Ala Leu Arg Ile Val Lys Ala Phe Val Thr
115 120 125

Thr Pro Trp Ser Lys Ala Gln Arg His Gln Arg Arg Ile Asp Ile Leu
130 135 140

Ala Glu Tyr Glu Arg Thr His Glu Ala Pro Pro Val Pro Gly Ala Pro
145 150 155 160

Ala

<210> 21
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 21

Gly Asp Asp Ala Arg Ile Ala Ala Ile Gly Asp Val Asp Glu Leu Asn
1 5 10 15

Ser Gln Ile Gly Val Leu Leu Ala Glu Pro Leu Pro Asp Asp Val Arg
20 25 30

Ala Ala Leu Ser Ala Ile Gln His Asp Leu Phe Asp Leu Gly Gly Glu
35 40 45

Leu Cys Ile Pro Gly His Ala Ala Ile Thr Glu Asp His Leu Leu Arg
50 55 60

Leu Ala Leu Trp Leu Val His Tyr Asn Gly Gln Leu Pro Pro Leu Glu
65 70 75 80

Glu Phe Ile Leu Pro Gly Gly Ala Arg Gly Ala Ala Leu Ala His Val
85 90 95

Cys Arg Thr Val Cys Arg Arg Ala Glu Arg Ser Ile Lys Ala Leu Gly
100 105 110

Ala Ser Glu Pro Leu Asn Ile Ala Pro Ala Ala Tyr Val Asn Leu Leu
115 120 125

Ser Asp Leu Leu Phe Val Leu Ala Arg Val Leu Asn Arg Ala Ala Gly
130 135 140

Gly Ala Asp Val Leu Trp Asp Arg Thr Arg Ala His
145 150 155

<210> 22
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 22

Ile Leu Ser Ala Glu Gln Ser Phe Thr Leu Arg His Pro His Gly Gln
1 5 10 15

Ala Ala Ala Leu Ala Phe Val Arg Glu Pro Ala Ala Ala Leu Ala Gly
20 25 30

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

Glu Leu Leu Val Arg Val Pro Leu Leu Gly Glu Val Asp Leu Pro Phe
50 55 60

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

Thr Leu Thr Gly Glu Arg Ala Trp Val Ala Val Ser Gly Gln Ala Thr
85 90 95

Ala Ala Glu Gly Gly Glu Met Ala Phe Ala Phe Gln Phe Gln Ala His
100 105 110

Leu Ala Thr Pro Glu Ala Glu Gly Glu Gly Gly Ala Ala Phe Glu Val
115 120 125

Met Val Gln Ala Ala Ala Gly Val Thr Leu Leu Leu Val Ala Met Ala
130 135 140

Leu Pro Gln Gly Leu Ala Ala Gly Leu Pro Pro Ala
145 150 155

<210> 23
<211> 155
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 23

Thr Lys Lys Val Gly Ile Val Asp Thr Thr Phe Ala Arg Val Asp Met
1 5 10 15

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

Ile Ile Arg Lys Thr Val Pro Gly Ile Lys Asp Leu Pro Val Ala Cys
35 40 45

Lys Lys Leu Leu Glu Glu Glu Gly Cys Asp Ile Val Met Ala Leu Gly
50 55 60

Met Pro Gly Lys Lys Glu Lys Asp Lys Val Cys Ala His Glu Ala Ser
65 70 75 80

Leu Gly Leu Met Leu Ala Gln Leu Met Thr Asn Lys His Ile Ile Glu
85 90 95

Val Phe Val His Glu Asp Glu Ala Lys Asp Asp Ala Glu Leu Lys Ile
100 105 110

Leu Ala Ala Arg Arg Ala Ile Glu His Ala Leu Asn Val Tyr Tyr Leu
115 120 125

Leu Phe Lys Pro Glu Tyr Leu Thr Arg Met Ala Gly Lys Gly Leu Arg
130 135 140

Gln Gly Phe Glu Asp Ala Gly Pro Ala Arg Glu
145 150 155

<210> 24
<211> 208
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 24

Asp Asp Ile Asn Asn Gln Leu Lys Arg Leu Lys Val Ile Pro Val Ile
1 5 10 15

Ala Ile Asp Asn Ala Glu Asp Ile Ile Pro Leu Gly Lys Val Leu Ala
20 25 30

Glu Asn Gly Leu Pro Ala Ala Glu Ile Thr Phe Arg Ser Ser Ala Ala
35 40 45

Val Lys Ala Ile Met Leu Leu Arg Ser Ala Gln Pro Glu Met Leu Ile
50 55 60

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

Ala Gly Ala Asp Phe Val Val Ser Pro Gly Phe Asn Pro Asn Thr Val
85 90 95

Arg Ala Cys Gln Ile Ile Gly Ile Asp Ile Val Pro Gly Val Asn Asn
100 105 110

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

Phe Phe Pro Ala Glu Ala Ser Gly Gly Ile Ser Met Val Lys Ser Leu
130 135 140

Val Gly Pro Tyr Gly Asp Ile Arg Leu Met Pro Thr Gly Gly Ile Thr
145 150 155 160

Pro Asp Asn Ile Asp Asn Tyr Leu Ala Ile Pro Gln Val Leu Ala Cys
165 170 175

Gly Gly Thr Trp Met Val Asp Lys Lys Leu Val Arg Asn Gly Glu Trp
180 185 190

Asp Glu Ile Ala Arg Leu Thr Arg Glu Ile Val Glu Gln Val Asn Pro
195 200 205

<210> 25
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 25

Pro Ile Phe Thr Leu Asn Thr Asn Ile Lys Ala Asp Asp Val Pro Ser
1 5 10 15

Asp Phe Leu Ser Leu Thr Ser Arg Leu Val Gly Leu Ile Leu Ser Lys
20 25 30

Pro Gly Ser Tyr Val Ala Val His Ile Asn Thr Asp Gln Gln Leu Ser
35 40 45

Phe Gly Gly Ser Thr Asn Pro Ala Ala Phe Gly Thr Leu Met Ser Ile
50 55 60

Gly Gly Ile Glu Pro Asp Lys Asn Arg Asp His Ser Ala Val Leu Phe
65 70 75 80

Asp His Leu Asn Ala Met Leu Gly Ile Pro Lys Asn Arg Met Tyr Ile
85 90 95

His Phe Val Asn Leu Asn Gly Asp Asp Val Gly Trp Asn Gly Thr Thr
100 105 110

Phe

<210> 26
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 26

Pro Ile Phe Thr Leu Asn Thr Asn Ile Lys Ala Asp Asp Val Pro Ser
1 5 10 15

Asp Phe Leu Ser Leu Thr Ser Arg Leu Val Gly Leu Ile Leu Ser Glu
20 25 30

Pro Gly Ser Tyr Val Ala Val His Ile Asn Thr Asp Gln Gln Leu Ser
35 40 45

Phe Gly Gly Ser Thr Asn Pro Ala Ala Phe Gly Thr Leu Met Ser Ile
50 55 60

Gly Gly Ile Glu Pro Asp Lys Asn Glu Asp His Ser Ala Val Leu Phe
65 70 75 80

Asp His Leu Asn Ala Met Leu Gly Ile Pro Lys Asn Arg Met Tyr Ile
85 90 95

His Phe Val Asp Leu Asp Gly Asp Asp Val Gly Trp Asn Gly Thr Thr
100 105 110

Phe

<210> 27
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 27

Asn Gln His Ser His Lys Asp His Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Asp Ile Val Asp Ala Cys Val Glu Ala Phe
20 25 30

Glu Ile Ala Met Ala Ala Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Asp Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Arg Tyr Arg Asp Ser Asp Glu His His Arg Phe
115 120 125

Phe Ala Ala His Phe Ala Val Lys Gly Val Glu Ala Ala Arg Ala Cys
130 135 140

Ile Glu Ile Leu Asn Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 28
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 28

Asn Gln His Ser His Lys Asp His Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Asp Ile Val Asp Ala Cys Val Glu Ala Phe
20 25 30

Glu Ile Ala Met Ala Ala Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asp Gly Gly Ile Tyr Asp His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Asp Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Glu Tyr Glu Asp Ser Asp Glu Asp His Glu Phe
115 120 125

Phe Ala Ala His Phe Ala Val Lys Gly Val Glu Ala Ala Arg Ala Cys
130 135 140

Ile Glu Ile Leu Asn Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 29
<211> 202
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 29

Glu Glu Leu Phe Lys Lys His Lys Ile Val Ala Val Leu Arg Ala Asn
1 5 10 15

Ser Val Glu Glu Ala Ile Glu Lys Ala Val Ala Val Phe Ala Gly Gly
20 25 30

Val His Leu Ile Glu Ile Thr Phe Thr Val Pro Asp Ala Asp Thr Val
35 40 45

Ile Lys Ala Leu Ser Val Leu Lys Glu Lys Gly Ala Ile Ile Gly Ala
50 55 60

Gly Thr Val Thr Ser Val Glu Gln Cys Arg Lys Ala Val Glu Ser Gly
65 70 75 80

Ala Glu Phe Ile Val Ser Pro His Leu Asp Glu Glu Ile Ser Gln Phe
85 90 95

Cys Lys Glu Lys Gly Val Phe Tyr Met Pro Gly Val Met Thr Pro Thr
100 105 110

Glu Leu Val Lys Ala Met Lys Leu Gly His Asp Ile Leu Lys Leu Phe
115 120 125

Pro Gly Glu Val Val Gly Pro Gln Phe Val Lys Ala Met Lys Gly Pro
130 135 140

Phe Pro Asn Val Lys Phe Val Pro Thr Gly Gly Val Asn Leu Asp Asn
145 150 155 160

Val Cys Glu Trp Phe Lys Ala Gly Val Leu Ala Val Gly Val Gly Asp
165 170 175

Ala Leu Val Lys Gly Asp Pro Asp Glu Val Arg Glu Lys Ala Lys Lys
180 185 190

Phe Val Glu Lys Ile Arg Gly Cys Thr Glu
195 200

<210> 30
<211> 202
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 30

Glu Glu Leu Phe Lys Lys His Lys Ile Val Ala Val Leu Arg Ala Asn
1 5 10 15

Ser Val Glu Glu Ala Ile Glu Lys Ala Val Ala Val Phe Ala Gly Gly
20 25 30

Val His Leu Ile Glu Ile Thr Phe Thr Val Pro Asp Ala Asp Thr Val
35 40 45

Ile Lys Ala Leu Ser Val Leu Lys Glu Lys Gly Ala Ile Ile Gly Ala
50 55 60

Gly Thr Val Thr Ser Val Glu Gln Cys Arg Lys Ala Val Glu Ser Gly
65 70 75 80

Ala Glu Phe Ile Val Ser Pro His Leu Asp Glu Glu Ile Ser Gln Phe
85 90 95

Cys Lys Glu Lys Gly Val Phe Tyr Met Pro Gly Val Met Thr Pro Thr
100 105 110

Glu Leu Val Lys Ala Met Lys Leu Gly His Asp Ile Leu Lys Leu Phe
115 120 125

Pro Gly Glu Val Val Gly Pro Glu Phe Val Glu Ala Met Lys Gly Pro
130 135 140

Phe Pro Asn Val Lys Phe Val Pro Thr Gly Gly Val Asp Leu Asp Asp
145 150 155 160

Val Cys Glu Trp Phe Asp Ala Gly Val Leu Ala Val Gly Val Gly Asp
165 170 175

Ala Leu Val Glu Gly Asp Pro Asp Glu Val Arg Glu Asp Ala Lys Glu
180 185 190

Phe Val Glu Glu Ile Arg Gly Cys Thr Glu
195 200

<210> 31
<211> 202
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 31

Glu Glu Leu Phe Lys Lys His Lys Ile Val Ala Val Leu Arg Ala Asn
1 5 10 15

Ser Val Glu Glu Ala Ile Glu Lys Ala Val Ala Val Phe Ala Gly Gly
20 25 30

Val His Leu Ile Glu Ile Thr Phe Thr Val Pro Asp Ala Asp Thr Val
35 40 45

Ile Lys Ala Leu Ser Val Leu Lys Glu Lys Gly Ala Ile Ile Gly Ala
50 55 60

Gly Thr Val Thr Ser Val Glu Gln Cys Arg Lys Ala Val Glu Ser Gly
65 70 75 80

Ala Glu Phe Ile Val Ser Pro His Leu Asp Glu Glu Ile Ser Gln Phe
85 90 95

Cys Lys Glu Lys Gly Val Phe Tyr Met Pro Gly Val Met Thr Pro Thr
100 105 110

Glu Leu Val Lys Ala Met Lys Leu Gly His Asp Ile Leu Lys Leu Phe
115 120 125

Pro Gly Glu Val Val Gly Pro Gln Phe Val Lys Ala Met Lys Gly Pro
130 135 140

Phe Pro Asn Val Lys Phe Val Pro Thr Gly Gly Val Asn Leu Asp Asn
145 150 155 160

Val Cys Lys Trp Phe Lys Ala Gly Val Leu Ala Val Gly Val Gly Lys
165 170 175

Ala Leu Val Lys Gly Lys Pro Asp Glu Val Arg Glu Lys Ala Lys Lys
180 185 190

Phe Val Lys Lys Ile Arg Gly Cys Thr Glu
195 200

<210> 32
<211> 156
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 32

Asn Gln His Ser His Lys Asp His Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Glu Ile Val Asp Ala Cys Val Ser Ala Phe
20 25 30

Glu Ala Ala Met Arg Asp Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Asp Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Arg Tyr Arg Asp Ser Asp Ala His Thr Leu Leu
115 120 125

Phe Leu Ala Leu Phe Ala Val Lys Gly Met Glu Ala Ala Arg Ala Cys
130 135 140

Val Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 33

<211> 156

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 33

Asn Gln His Ser His Lys Asp His Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Glu Ile Val Asp Ala Cys Val Ser Ala Phe
20 25 30

Glu Ala Ala Met Arg Asp Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asp Gly Gly Ile Tyr Asp His Glu Phe Val Ala Ser Ala Val Ile Asp
85 90 95

Gly Met Met Asn Val Gln Leu Asp Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Glu Tyr Glu Asp Ser Asp Ala Asp Thr Leu Leu
115 120 125

Phe Leu Ala Leu Phe Ala Val Lys Gly Met Glu Ala Ala Arg Ala Cys
130 135 140

Val Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 34

<211> 156

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 34

Asn Gln His Ser His Lys Asp His Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Glu Ile Val Asp Ala Cys Val Ser Ala Phe
20 25 30

Glu Ala Ala Met Arg Asp Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile Asn
85 90 95

Gly Met Met Asn Val Gln Leu Asn Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Asn Tyr Asp Lys Ser Lys Ala His Thr Leu Leu
115 120 125

Phe Leu Ala Leu Phe Ala Val Lys Gly Met Glu Ala Ala Arg Ala Cys
130 135 140

Val Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 35

<211> 155

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<220>

<221> VARIANT

<222> (69)..(69)

<223> Xaa is A or K

<400> 35

Thr Lys Lys Val Gly Ile Val Asp Thr Thr Phe Ala Arg Val Asp Met
1 5 10 15

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

Ile Ile Arg Lys Thr Val Pro Gly Ile Lys Asp Leu Pro Val Ala Cys
35 40 45

Lys Lys Leu Leu Glu Glu Glu Gly Cys Asp Ile Val Met Ala Leu Gly
50 55 60

Met Pro Gly Lys Xaa Glu Lys Asp Lys Val Cys Ala His Glu Ala Ser
65 70 75 80

Leu Gly Leu Met Leu Ala Gln Leu Met Thr Asn Lys His Ile Ile Glu
85 90 95

Val Phe Val His Glu Asp Glu Ala Lys Asp Asp Ala Glu Leu Lys Ile
100 105 110

Leu Ala Ala Arg Arg Ala Ile Glu His Ala Leu Asn Val Tyr Tyr Leu
115 120 125

Leu Phe Lys Pro Glu Tyr Leu Thr Arg Met Ala Gly Lys Gly Leu Arg
130 135 140

Gln Gly Phe Glu Asp Ala Gly Pro Ala Arg Glu
145 150 155

<210> 36
<211> 208
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<220>
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<222> (1)..(1)
<223> Xaa is S or D

<220>
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<222> (2)..(2)
<223> Xaa is T or D

<220>
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<222> (9)..(9)
<223> Xaa is A or R

<220>
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<222> (84)..(84)
<223> Xaa is T or D

<220>
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<222> (118)..(118)
<223> Xaa is A or Q

<220>
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<222> (162)..(162)
<223> Xaa is S or D

<220>
<221> VARIANT
<222> (188)..(188)
<223> Xaa is T or R

<400> 36

Xaa Xaa Ile Asn Asn Gln Leu Lys Xaa Leu Lys Val Ile Pro Val Ile
1 5 10 15

Ala Ile Asp Asn Ala Glu Asp Ile Ile Pro Leu Gly Lys Val Leu Ala
20 25 30

Glu Asn Gly Leu Pro Ala Ala Glu Ile Thr Phe Arg Ser Ser Ala Ala
35 40 45

Val Lys Ala Ile Met Leu Leu Arg Ser Ala Gln Pro Glu Met Leu Ile
50 55 60

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

Ala Gly Ala Xaa Phe Val Val Ser Pro Gly Phe Asn Pro Asn Thr Val
85 90 95

Arg Ala Cys Gln Ile Ile Gly Ile Asp Ile Val Pro Gly Val Asn Asn
100 105 110

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

Phe Phe Pro Ala Glu Ala Ser Gly Gly Ile Ser Met Val Lys Ser Leu
130 135 140

Val Gly Pro Tyr Gly Asp Ile Arg Leu Met Pro Thr Gly Gly Ile Thr
145 150 155 160

Pro Xaa Asn Ile Asp Asn Tyr Leu Ala Ile Pro Gln Val Leu Ala Cys
165 170 175

Gly Gly Thr Trp Met Val Asp Lys Lys Leu Val Xaa Asn Gly Glu Trp
180 185 190

Asp Glu Ile Ala Arg Leu Thr Arg Glu Ile Val Glu Gln Val Asn Pro
195 200 205

<210> 37

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

<220>
<223> Synthetic Peptide

<220>
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<222> (12)..(12)
<223> Xaa is T or D

<220>
<221> VARIANT
<222> (32)..(32)
<223> Xaa is K or E

<220>
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<222> (70)..(70)
<223> Xaa is S or D

<220>
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<222> (73)..(73)
<223> Xaa is R or E

<220>
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<222> (100)..(100)
<223> Xaa is N or D

<220>
<221> VARIANT
<222> (102)..(102)
<223> Xaa is N or D

<400> 37

Pro Ile Phe Thr Leu Asn Thr Asn Ile Lys Ala Xaa Asp Val Pro Ser
1 5 10 15

Asp Phe Leu Ser Leu Thr Ser Arg Leu Val Gly Leu Ile Leu Ser Xaa
20 25 30

Pro Gly Ser Tyr Val Ala Val His Ile Asn Thr Asp Gln Gln Leu Ser
35 40 45

Phe Gly Gly Ser Thr Asn Pro Ala Ala Phe Gly Thr Leu Met Ser Ile
50 55 60

Gly Gly Ile Glu Pro Xaa Lys Asn Xaa Asp His Ser Ala Val Leu Phe
65 70 75 80

Asp His Leu Asn Ala Met Leu Gly Ile Pro Lys Asn Arg Met Tyr Ile
85 90 95

His Phe Val Xaa Leu Xaa Gly Asp Asp Val Gly Trp Asn Gly Thr Thr
100 105 110

Phe

<210> 38
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<220>
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<222> (8)..(8)
<223> Xaa is Y or H

<220>
<221> VARIANT
<222> (81)..(81)
<223> Xaa is N or D

<220>
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<222> (86)..(86)
<223> Xaa is R or D

<220>
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<222> (104)..(104)
<223> Xaa is S or D

<220>
<221> VARIANT
<222> (118)..(118)
<223> Xaa is R or E

<220>
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<222> (120)..(120)
<223> Xaa is R or E

<220>
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<222> (123)..(123)
<223> Xaa is A or D

<220>
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<222> (125)..(125)
<223> Xaa is H or D

<220>
<221> VARIANT
<222> (127)..(127)
<223> Xaa is R or E

<220>
<221> VARIANT
<222> (149)..(149)
<223> Xaa is A or N

<400> 38

Asn Gln His Ser His Lys Asp Xaa Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Asp Ile Val Asp Ala Cys Val Glu Ala Phe
20 25 30

Glu Ile Ala Met Ala Ala Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

Ala Glu Thr Gly Arg Tyr Gly Ala Val Leu Gly Thr Ala Phe Val Val

65		70		75		80
Xaa Gly Gly Ile Tyr Xaa His Glu Phe Val Ala Ser Ala Val Ile Asp						
	85			90		95
Gly Met Met Asn Val Gln Leu Xaa Thr Gly Val Pro Val Leu Ser Ala						
	100			105		110
Val Leu Thr Pro His Xaa Tyr Xaa Asp Ser Xaa Glu Xaa His Xaa Phe						
	115			120		125
Phe Ala Ala His Phe Ala Val Lys Gly Val Glu Ala Ala Arg Ala Cys						
	130			135		140
Ile Glu Ile Leu Xaa Ala Arg Glu Lys Ile Ala Ala						
	145			150		155

<210> 39
 <211> 202
 <212> PRT
 <213> Artificial Sequence

<220>
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<220>
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 <222> (123)..(123)
 <223> Xaa is T or D

<220>
 <221> VARIANT
 <222> (136)..(136)
 <223> Xaa is Q or E

<220>
 <221> VARIANT
 <222> (139)..(139)
 <223> Xaa is K or E

<220>
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 <222> (157)..(157)

<223> Xaa is N or D

<220>

<221> VARIANT

<222> (160)..(160)

<223> Xaa is N or D

<220>

<221> VARIANT

<222> (163)..(163)

<223> Xaa is E or K

<220>

<221> VARIANT

<222> (166)..(166)

<223> Xaa is D or K

<220>

<221> VARIANT

<222> (176)..(176)

<223> Xaa is S, D or K

<220>

<221> VARIANT

<222> (180)..(180)

<223> Xaa is K or E

<220>

<221> VARIANT

<222> (182)..(182)

<223> Xaa is T, D, or K

<220>

<221> VARIANT

<222> (189)..(189)

<223> Xaa is D or K

<220>

<221> VARIANT

<222> (192)..(192)

<223> Xaa is A, E, or K

<220>

<221> VARIANT

<222> (195)..(195)

<223> Xaa is E or K

<220>

<221> VARIANT

<222> (196)..(196)

<223> Xaa is E or K

<400> 39

Glu Glu Leu Phe Lys Lys His Lys Ile Val Ala Val Leu Arg Ala Asn
1 5 10 15

Ser Val Glu Glu Ala Ile Glu Lys Ala Val Ala Val Phe Ala Gly Gly
20 25 30

Val His Leu Ile Glu Ile Thr Phe Thr Val Pro Asp Ala Asp Thr Val
35 40 45

Ile Lys Ala Leu Ser Val Leu Lys Glu Lys Gly Ala Ile Ile Gly Ala
50 55 60

Gly Thr Val Thr Ser Val Glu Gln Cys Arg Lys Ala Val Glu Ser Gly
65 70 75 80

Ala Glu Phe Ile Val Ser Pro His Leu Asp Glu Glu Ile Ser Gln Phe
85 90 95

Cys Lys Glu Lys Gly Val Phe Tyr Met Pro Gly Val Met Thr Pro Thr
100 105 110

Glu Leu Val Lys Ala Met Lys Leu Gly His Xaa Ile Leu Lys Leu Phe
115 120 125

Pro Gly Glu Val Val Gly Pro Xaa Phe Val Xaa Ala Met Lys Gly Pro
130 135 140

Phe Pro Asn Val Lys Phe Val Pro Thr Gly Gly Val Xaa Leu Asp Xaa
145 150 155 160

Val Cys Xaa Trp Phe Xaa Ala Gly Val Leu Ala Val Gly Val Gly Xaa
165 170 175

Ala Leu Val Xaa Gly Xaa Pro Asp Glu Val Arg Glu Xaa Ala Lys Xaa
180 185 190

Phe Val Xaa Xaa Ile Arg Gly Cys Thr Glu
195 200

<210> 40
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
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<220>
<221> VARIANT
<222> (8)..(8)
<223> Xaa is Y or H

<220>
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<222> (37)..(37)
<223> Xaa is A or R

<220>
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<222> (81)..(81)
<223> Xaa is N or D

<220>
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<222> (86)..(86)
<223> Xaa is R or D

<220>
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<222> (96)..(96)
<223> Xaa is N or D

<220>
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<222> (104)..(104)
<223> Xaa is S, N, or D

<220>
<221> VARIANT
<222> (118)..(118)
<223> Xaa is R, E, or N

<220>
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<222> (120)..(120)
<223> Xaa is R, E, or D

<220>
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<222> (121)..(121)
<223> Xaa is K or D

<220>
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<222> (123)..(123)
<223> Xaa is K or D

<220>
<221> VARIANT
<222> (125)..(125)
<223> Xaa is H or D

<400> 40

Asn Gln His Ser His Lys Asp Xaa Glu Thr Val Arg Ile Ala Val Val
1 5 10 15

Arg Ala Arg Trp His Ala Glu Ile Val Asp Ala Cys Val Ser Ala Phe
20 25 30

Glu Ala Ala Met Xaa Asp Ile Gly Gly Asp Arg Phe Ala Val Asp Val
35 40 45

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

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

Xaa Gly Gly Ile Tyr Xaa His Glu Phe Val Ala Ser Ala Val Ile Xaa
85 90 95

Gly Met Met Asn Val Gln Leu Xaa Thr Gly Val Pro Val Leu Ser Ala
100 105 110

Val Leu Thr Pro His Xaa Tyr Xaa Xaa Ser Xaa Ala Xaa Thr Leu Leu
115 120 125

Phe Leu Ala Leu Phe Ala Val Lys Gly Met Glu Ala Ala Arg Ala Cys
130 135 140

Val Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 41
<211> 158
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 41

Gly Glu Val Pro Ile Gly Asp Pro Lys Glu Leu Asn Gly Met Glu Ile
1 5 10 15

Ala Ala Val Tyr Leu Gln Pro Ile Glu Met Glu Pro Arg Gly Ile Asp
20 25 30

Leu Ala Ala Ser Leu Ala Asp Ile His Leu Glu Ala Asp Ile His Ala
35 40 45

Leu Lys Asn Asn Pro Asn Gly Phe Pro Glu Gly Phe Trp Met Pro Tyr
50 55 60

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

Thr Gly Thr Leu Met Pro Met Val Ala Asp Asp Gly Pro His Tyr Gly
85 90 95

Ala Asn Ile Ala Met Glu Lys Asp Lys Lys Gly Gly Phe Gly Val Gly
100 105 110

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

Gly Arg His Val Asp Glu Glu Thr Gly Val Gly Lys Trp Phe Glu Pro
130 135 140

Phe Val Val Thr Tyr Phe Phe Lys Tyr Thr Gly Thr Pro Lys
145 150 155

<210> 42
<211> 183
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 42

Ser Gln Ala Ile Gly Ile Leu Glu Leu Thr Ser Ile Ala Lys Gly Met
1 5 10 15

Glu Leu Gly Asp Ala Met Leu Lys Ser Ala Asn Val Asp Leu Leu Val
20 25 30

Ser Lys Thr Ile Ser Pro Gly Lys Phe Leu Leu Met Leu Gly Gly Asp
35 40 45

Ile Gly Ala Ile Gln Gln Ala Ile Glu Thr Gly Thr Ser Gln Ala Gly
50 55 60

Glu Met Leu Val Asp Ser Leu Val Leu Ala Asn Ile His Pro Ser Val
65 70 75 80

Leu Pro Ala Ile Ser Gly Leu Asn Ser Val Asp Lys Arg Gln Ala Val
85 90 95

Gly Ile Val Glu Thr Trp Ser Val Ala Ala Cys Ile Ser Ala Ala Asp
100 105 110

Leu Ala Val Lys Gly Ser Asn Val Thr Leu Val Arg Val His Met Ala
115 120 125

Phe Gly Ile Gly Gly Lys Cys Tyr Met Val Val Ala Gly Asp Val Leu
130 135 140

Asp Val Ala Ala Ala Val Ala Thr Ala Ser Leu Ala Ala Gly Ala Lys
145 150 155 160

Gly Leu Leu Val Tyr Ala Ser Ile Ile Pro Arg Pro His Glu Ala Met
165 170 175

Trp Arg Gln Met Val Glu Gly
180

<210> 43
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 43

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

Ile Ala His Ala Leu Val Glu Glu Arg Leu Ala Ala Cys Val Asn Ile
20 25 30

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

Asp His Glu Leu Leu Leu Leu Val Lys Thr Thr Thr His Ala Phe Pro
50 55 60

Lys Leu Lys Glu Arg Val Lys Ala Leu His Pro Tyr Thr Val Pro Glu
65 70 75 80

Ile Val Ala Leu Pro Ile Ala Glu Gly Asn Arg Glu Tyr Leu Asp Trp
85 90 95

Leu Arg Glu Asn Thr Gly
100

<210> 44
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 44

Val Arg Gly Ile Arg Gly Ala Ile Thr Val Glu Glu Asp Thr Pro Ala
1 5 10 15

Ala Ile Leu Ala Ala Thr Ile Glu Leu Leu Lys Met Leu Glu Ala
20 25 30

Asn Gly Ile Gln Ser Tyr Glu Glu Leu Ala Ala Val Ile Phe Thr Val
35 40 45

Thr Glu Asp Leu Thr Ser Ala Phe Pro Ala Glu Ala Ala Arg Leu Ile
50 55 60

Gly Met His Arg Val Pro Leu Leu Ser Ala Arg Glu Val Pro Val Pro
65 70 75 80

Gly Ser Leu Pro Arg Val Ile Arg Val Leu Ala Leu Trp Asn Thr Asp
85 90 95

Thr Pro Gln Asp Arg Val Arg His Val Tyr Leu Asn Glu Ala Val Arg
100 105 110

Leu Arg Pro Asp Leu Glu Ser Ala Gln
115 120

<210> 45
<211> 176
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 45

Ser Lys Ala Lys Ile Gly Ile Val Thr Val Ser Asp Arg Ala Ser Ala
1 5 10 15

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

Leu Tyr Leu Thr Ser Glu Trp Glu Pro Ile Tyr Gln Val Ile Pro Asp
35 40 45

Glu Gln Asp Val Ile Glu Thr Thr Leu Ile Lys Met Ala Asp Glu Gln
50 55 60

Asp Cys Cys Leu Ile Val Thr Thr Gly Gly Thr Gly Pro Ala Lys Arg
65 70 75 80

Asp Val Thr Pro Glu Ala Thr Glu Ala Val Cys Asp Arg Met Met Pro
85 90 95

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

Ala Ile Leu Ser Arg Gln Thr Ala Gly Leu Arg Gly Asp Ser Leu Ile
115 120 125

Val Asn Leu Pro Gly Asp Pro Ala Ser Ile Ser Asp Cys Leu Leu Ala
130 135 140

Val Phe Pro Ala Ile Pro Tyr Cys Ile Asp Leu Met Glu Gly Pro Tyr
145 150 155 160

Leu Glu Cys Asn Glu Ala Met Ile Lys Pro Phe Arg Pro Lys Ala Lys
165 170 175

<210> 46
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 46

Val Arg Gly Ile Arg Gly Ala Ile Thr Val Asn Ser Asp Thr Pro Thr
1 5 10 15

Ser Ile Ile Ile Ala Thr Ile Leu Leu Leu Glu Lys Met Leu Glu Ala
20 25 30

Asn Gly Ile Gln Ser Tyr Glu Glu Leu Ala Ala Val Ile Phe Thr Val
35 40 45

Thr Glu Asp Leu Thr Ser Ala Phe Pro Ala Glu Ala Ala Arg Gln Ile
50 55 60

Gly Met His Arg Val Pro Leu Leu Ser Ala Arg Glu Val Pro Val Pro
65 70 75 80

Gly Ser Leu Pro Arg Val Ile Arg Val Leu Ala Leu Trp Asn Thr Asp
85 90 95

Thr Pro Gln Asp Arg Val Arg His Val Tyr Leu Ser Glu Ala Val Arg
100 105 110

Leu Arg Pro Asp Leu Glu Ser Ala Gln
115 120

<210> 47
<211> 171
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 47

Arg Ile Thr Thr Lys Val Gly Asp Lys Gly Ser Thr Arg Leu Phe Gly
1 5 10 15

Gly Glu Glu Val Trp Lys Asp Ser Pro Ile Ile Glu Ala Asn Gly Thr
20 25 30

Leu Asp Glu Leu Thr Ser Phe Ile Gly Glu Ala Lys His Tyr Val Asp
35 40 45

Glu Glu Met Lys Gly Ile Leu Glu Glu Ile Gln Asn Asp Ile Tyr Lys
50 55 60

Ile Met Gly Glu Ile Gly Ser Lys Gly Lys Ile Glu Gly Ile Ser Glu
65 70 75 80

Glu Arg Ile Ala Trp Leu Leu Lys Leu Ile Leu Arg Tyr Met Glu Met
85 90 95

Val Asn Leu Lys Ser Phe Val Leu Pro Gly Gly Thr Leu Glu Ser Ala
100 105 110

Lys Leu Asp Val Cys Arg Thr Ile Ala Arg Arg Ala Leu Arg Lys Val
115 120 125

Leu Thr Val Thr Arg Glu Phe Gly Ile Gly Ala Glu Ala Ala Ala Tyr
130 135 140

Leu Leu Ala Leu Ser Asp Leu Leu Phe Leu Leu Ala Arg Val Ile Glu
145 150 155 160

Ile Glu Lys Asn Lys Leu Lys Glu Val Arg Ser
165 170

<210> 48
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 48

Pro His Leu Val Ile Glu Ala Thr Ala Asn Leu Arg Leu Glu Thr Ser
1 5 10 15

Pro Gly Glu Leu Leu Glu Gln Ala Asn Lys Ala Leu Phe Ala Ser Gly
20 25 30

Gln Phe Gly Glu Ala Asp Ile Lys Ser Arg Phe Val Thr Leu Glu Ala
35 40 45

Tyr Arg Gln Gly Thr Ala Ala Val Glu Arg Ala Tyr Leu His Ala Cys
50 55 60

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

Ala Ser Leu Cys Ala Val Leu Ala Glu Ala Val Ala Gly Gly Gly Glu
85 90 95

Glu Gly Val Gln Val Ser Val Glu Val Arg Glu Met Glu Arg Leu Ser
100 105 110

Tyr Ala Lys Arg Val Val Ala Arg Gln Arg
115 120

<210> 49
<211> 157
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 49

Glu Ser Val Asn Thr Ser Phe Leu Ser Pro Ser Leu Val Thr Ile Arg
1 5 10 15

Asp Phe Asp Asn Gly Gln Phe Ala Val Leu Arg Ile Gly Arg Thr Gly
20 25 30

Phe Pro Ala Asp Lys Gly Asp Ile Asp Leu Cys Leu Asp Lys Met Ile
35 40 45

Gly Val Arg Ala Ala Gln Ile Phe Leu Gly Asp Asp Thr Glu Asp Gly
50 55 60

Phe Lys Gly Pro His Ile Arg Ile Arg Cys Val Asp Ile Asp Asp Lys
65 70 75 80

His Thr Tyr Asn Ala Met Val Tyr Val Asp Leu Ile Val Gly Thr Gly
85 90 95

Ala Ser Glu Val Glu Arg Glu Thr Ala Glu Glu Glu Ala Lys Leu Ala
100 105 110

Leu Arg Val Ala Leu Gln Val Asp Ile Ala Asp Glu His Ser Cys Val
115 120 125

Thr Gln Phe Glu Met Lys Leu Arg Glu Glu Leu Leu Ser Ser Asp Ser
130 135 140

Phe His Pro Asp Lys Asp Glu Tyr Tyr Lys Asp Phe Leu
145 150 155

<210> 50

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 50

Pro Val Ile Gln Thr Phe Val Ser Thr Pro Leu Asp His His Lys Arg
1 5 10 15

Leu Leu Leu Ala Ile Ile Tyr Arg Ile Val Thr Arg Val Val Leu Gly
20 25 30

Lys Pro Glu Asp Leu Val Met Met Thr Phe His Asp Ser Thr Pro Met
35 40 45

His Phe Phe Gly Ser Thr Asp Pro Val Ala Cys Val Arg Val Glu Ala
50 55 60

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

Thr Ala Ala Ile Thr Ala Val Cys Gly Ile Val Ala Asp Arg Ile Phe
85 90 95

Val Leu Tyr Phe Ser Pro Leu His Cys Gly Trp Asn Gly Thr Asn Phe
100 105 110

<210> 51

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 51

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

Ile Ala His Ala Leu Val Glu Glu Arg Leu Ala Ala Cys Val Asn Ile
20 25 30

Val Pro Gly Leu Thr Ser Ile Tyr Arg Glu Glu Gly Ser Val Val Ser
35 40 45

Asp His Glu Leu Leu Leu Val Lys Thr Thr Thr Asp Ala Phe Pro
50 55 60

Lys Leu Lys Glu Arg Val Lys Glu Leu His Pro Tyr Glu Val Pro Glu
65 70 75 80

Ile Val Ala Leu Pro Ile Ala Glu Gly Asn Arg Glu Tyr Leu Asp Trp
85 90 95

Leu Arg Glu Asn Thr Gly
100

<210> 52
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 52

Asn Leu Ala Glu Lys Met Tyr Lys Ala Gly Asn Ala Met Tyr Arg Lys
1 5 10 15

Gly Gln Tyr Thr Ile Ala Ile Ile Ala Tyr Thr Leu Ala Leu Leu Lys
20 25 30

Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala Ala Tyr
35 40 45

Lys Lys Gly Glu Tyr Asp Glu Ala Ile Glu Ala Tyr Gln Lys Ala Leu
50 55 60

Glu Leu Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala
65 70 75 80

Tyr Tyr Lys Gln Gly Asp Tyr Asp Glu Ala Ile Glu Tyr Tyr Lys Lys
85 90 95

Ala Leu Arg Leu Asp Pro Arg Asn Val Asp Ala Ile Glu Asn Leu Ile
100 105 110

Glu Ala Glu Glu Lys Gln Gly
115

<210> 53

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 53

Glu Glu Ala Glu Leu Ala Tyr Leu Leu Gly Glu Leu Ala Tyr Lys Leu
1 5 10 15

Gly Glu Tyr Arg Ile Ala Ile Arg Ala Tyr Arg Ile Ala Leu Lys Arg
20 25 30

Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala Tyr Tyr
35 40 45

Lys Gln Gly Asp Tyr Arg Glu Ala Ile Arg Tyr Tyr Leu Arg Ala Leu
50 55 60

Lys Leu Asp Pro Glu Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala
65 70 75 80

Leu Tyr Lys Gln Gly Lys Tyr Asp Leu Ala Ile Ile Ala Tyr Gln Ala
85 90 95

Ala Leu Glu Glu Asp Pro Asn Asn Ala Glu Ala Lys Gln Asn Leu Gly
100 105 110

Asn Ala Lys Gln Lys Gln Gly
115

<210> 54
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 54

Asn Ser Ala Glu Ala Met Tyr Lys Met Gly Asn Ala Ala Tyr Lys Gln
1 5 10 15

Gly Asp Tyr Ile Leu Ala Ile Ile Ala Tyr Leu Leu Ala Leu Glu Lys
20 25 30

Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala Ala Tyr
35 40 45

Lys Gln Gly Asp Tyr Asp Glu Ala Ile Glu Tyr Tyr Gln Lys Ala Leu
50 55 60

Glu Leu Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala
65 70 75 80

Tyr Tyr Lys Gln Gly Asp Tyr Asp Glu Ala Ile Glu Tyr Tyr Glu Lys
85 90 95

Ala Leu Glu Leu Asp Pro Asn Asn Ala Glu Ala Leu Lys Asn Leu Leu
100 105 110

Glu Ala Ile Ala Glu Gln Asp
115

<210> 55
<211> 187
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 55

Thr Asp Pro Leu Ala Val Ile Leu Tyr Ile Ala Ile Leu Lys Ala Glu
1 5 10 15

Lys Ser Ile Ala Arg Ala Lys Ala Ala Glu Ala Leu Gly Lys Ile Gly
20 25 30

Asp Glu Arg Ala Val Glu Pro Leu Ile Lys Ala Leu Lys Asp Glu Asp
35 40 45

Ala Leu Val Arg Ala Ala Ala Ala Asp Ala Leu Gly Gln Ile Gly Asp
50 55 60

Glu Arg Ala Val Glu Pro Leu Ile Lys Ala Leu Lys Asp Glu Glu Gly
65 70 75 80

Leu Val Arg Ala Ser Ala Ala Ile Ala Leu Gly Gln Ile Gly Asp Glu
85 90 95

Arg Ala Val Gln Pro Leu Ile Lys Ala Leu Thr Asp Glu Arg Asp Leu
100 105 110

Val Arg Val Ala Ala Ala Val Ala Leu Gly Arg Ile Gly Asp Glu Lys
115 120 125

Ala Val Arg Pro Leu Ile Ile Val Leu Lys Asp Glu Glu Gly Glu Val
130 135 140

Arg Glu Ala Ala Ala Ile Ala Leu Gly Ser Ile Gly Gly Glu Arg Val
145 150 155 160

Arg Ala Ala Met Glu Lys Leu Ala Glu Arg Gly Thr Gly Phe Ala Arg
165 170 175

Lys Val Ala Val Asn Tyr Leu Glu Thr His Lys
180 185

<210> 56
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 56

Glu Glu Ala Glu Leu Ala Tyr Leu Leu Gly Glu Leu Ala Tyr Lys Leu
1 5 10 15

Gly Glu Tyr Arg Ile Ala Ile Arg Ala Tyr Arg Ile Ala Leu Lys Arg
20 25 30

Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala Tyr Tyr
35 40 45

Lys Gln Gly Asp Tyr Asp Glu Ala Ile Glu Tyr Tyr Gln Lys Ala Leu
50 55 60

Glu Leu Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala
65 70 75 80

Tyr Tyr Lys Gln Gly Asp Tyr Asp Glu Ala Ile Glu Tyr Tyr Glu Lys
85 90 95

Ala Leu Glu Leu Asp Pro Glu Asn Leu Glu Ala Leu Gln Asn Leu Leu
100 105 110

Asn Ala Met Asp Lys Gln Gly
115

<210> 57
<211> 279
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 57

Ile Glu Glu Val Val Ala Glu Met Ile Asp Ile Leu Ala Glu Ser Ser
1 5 10 15

Lys Lys Ser Ile Glu Glu Leu Ala Arg Ala Ala Asp Asn Lys Thr Thr
20 25 30

Glu Lys Ala Val Ala Glu Ala Ile Glu Glu Ile Ala Arg Leu Ala Thr
35 40 45

Ala Ala Ile Gln Leu Ile Glu Ala Leu Ala Lys Asn Leu Ala Ser Glu
50 55 60

Glu Phe Met Ala Arg Ala Ile Ser Ala Ile Ala Glu Leu Ala Lys Lys
65 70 75 80

Ala Ile Glu Ala Ile Tyr Arg Leu Ala Asp Asn His Thr Thr Asp Thr
85 90 95

Phe Met Ala Arg Ala Ile Ala Ala Ile Ala Asn Leu Ala Val Thr Ala
100 105 110

Ile Leu Ala Ile Ala Ala Leu Ala Ser Asn His Thr Thr Glu Glu Phe
115 120 125

Met Ala Arg Ala Ile Ser Ala Ile Ala Glu Leu Ala Lys Lys Ala Ile
130 135 140

Glu Ala Ile Tyr Arg Leu Ala Asp Asn His Thr Thr Asp Lys Phe Met
145 150 155 160

Ala Ala Ala Ile Glu Ala Ile Ala Leu Leu Ala Thr Leu Ala Ile Leu
165 170 175

Ala Ile Ala Leu Leu Ala Ser Asn His Thr Thr Glu Lys Phe Met Ala
180 185 190

Arg Ala Ile Met Ala Ile Ala Ile Leu Ala Ala Lys Ala Ile Glu Ala
195 200 205

Ile Tyr Arg Leu Ala Asp Asn His Thr Ser Pro Thr Tyr Ile Glu Lys
210 215 220

Ala Ile Glu Ala Ile Glu Lys Ile Ala Arg Lys Ala Ile Lys Ala Ile
225 230 235 240

Glu Met Leu Ala Lys Asn Ile Thr Thr Glu Glu Tyr Lys Glu Lys Ala
245 250 255

Lys Lys Ile Ile Asp Ile Ile Arg Lys Leu Ala Lys Met Ala Ile Lys
260 265 270

Lys Leu Glu Asp Asn Arg Thr
275

<210> 58
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 58

Lys Tyr Asp Gly Ser Lys Leu Arg Ile Gly Ile Leu His Ala Arg Trp
1 5 10 15

Asn Ala Glu Ile Ile Leu Ala Leu Val Leu Gly Ala Leu Lys Arg Leu
20 25 30

Gln Glu Phe Gly Val Lys Arg Glu Asn Ile Ile Ile Glu Thr Val Pro
35 40 45

Gly Ser Phe Glu Leu Pro Tyr Gly Ser Lys Leu Phe Val Glu Lys Gln
50 55 60

Lys Arg Leu Gly Lys Pro Leu Asp Ala Ile Ile Pro Ile Gly Val Leu
65 70 75 80

Ile Lys Gly Ser Thr Met His Phe Glu Tyr Ile Cys Asp Ser Thr Thr
85 90 95

His Gln Leu Met Lys Leu Asn Phe Glu Leu Gly Ile Pro Val Ile Phe
100 105 110

Gly Val Leu Thr Cys Leu Thr Asp Glu Gln Ala Glu Ala Arg Ala Gly
115 120 125

Leu Ile Glu Gly Lys Met His Asn His Gly Glu Asp Trp Gly Ala Ala
130 135 140

Ala Val Glu Met Ala Thr Lys Phe Asn
145 150

<210> 59
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 59

Glu Glu Ala Glu Leu Ala Tyr Leu Leu Gly Glu Leu Ala Tyr Lys Leu
1 5 10 15

Gly Glu Tyr Arg Ile Ala Ile Arg Ala Tyr Arg Ile Ala Leu Lys Arg
20 25 30

Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala Tyr Tyr
35 40 45

Lys Gln Gly Arg Tyr Arg Glu Ala Ile Glu Tyr Tyr Gln Lys Ala Leu
50 55 60

Glu Leu Asp Pro Asn Asn Ala Glu Ala Trp Tyr Asn Leu Gly Asn Ala
65 70 75 80

Tyr Tyr Glu Arg Gly Glu Tyr Glu Glu Ala Ile Glu Tyr Tyr Arg Lys
85 90 95

Ala Leu Arg Leu Asp Pro Asn Asn Ala Asp Ala Met Gln Asn Leu Leu
100 105 110

Asn Ala Lys Met Arg Glu Glu
115

<210> 60

<211> 157

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 60

Met Asn Gln His Ser His Lys Asp His Glu Thr Val Arg Ile Ala Val
1 5 10 15

Val Arg Ala Arg Trp His Ala Glu Ile Val Asp Ala Cys Val Ser Ala
20 25 30

Phe Glu Ala Ala Met Arg Asp Ile Gly Gly Asp Arg Phe Ala Val Asp
35 40 45

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

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

Val Asn Gly Gly Ile Tyr Arg His Glu Phe Val Ala Ser Ala Val Ile
85 90 95

Asn Gly Met Met Asn Val Gln Leu Asn Thr Gly Val Pro Val Leu Ser
100 105 110

Ala Val Leu Thr Pro His Asn Tyr Asp Lys Ser Lys Ala His Thr Leu
115 120 125

Leu Phe Leu Ala Leu Phe Ala Val Lys Gly Met Glu Ala Ala Arg Ala
130 135 140

Cys Val Glu Ile Leu Ala Ala Arg Glu Lys Ile Ala Ala
145 150 155

<210> 61
<211> 205
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Peptide

<400> 61

Met Glu Glu Leu Phe Lys Lys His Lys Ile Val Ala Val Leu Arg Ala
1 5 10 15

Asn Ser Val Glu Glu Ala Ile Glu Lys Ala Val Ala Val Phe Ala Gly
20 25 30

Gly Val His Leu Ile Glu Ile Thr Phe Thr Val Pro Asp Ala Asp Thr
35 40 45

Val Ile Lys Ala Leu Ser Val Leu Lys Glu Lys Gly Ala Ile Ile Gly
50 55 60

Ala Gly Thr Val Thr Ser Val Glu Gln Ala Arg Lys Ala Val Glu Ser
65 70 75 80

Gly Ala Glu Phe Ile Val Ser Pro His Leu Asp Glu Glu Ile Ser Gln
85 90 95

Phe Ala Lys Glu Lys Gly Val Phe Tyr Met Pro Gly Val Met Thr Pro
100 105 110

Thr Glu Leu Val Lys Ala Met Lys Leu Gly His Thr Ile Leu Lys Leu
115 120 125

Phe Pro Gly Glu Val Val Gly Pro Gln Phe Val Lys Ala Met Lys Gly
130 135 140

Pro Phe Pro Asn Val Lys Phe Val Pro Thr Gly Gly Val Asn Leu Asp
145 150 155 160

Asn Val Ala Glu Trp Phe Lys Ala Gly Val Leu Ala Val Gly Val Gly
165 170 175

Ser Ala Leu Val Lys Gly Thr Pro Asp Glu Val Arg Glu Lys Ala Lys
180 185 190

Ala Phe Val Glu Lys Ile Arg Gly Ala Thr Glu Leu Glu
195 200 205

<210> 62

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 62

Glu Lys Ala Ala Lys Ala Glu Glu Ala Ala Arg Lys
1 5 10