

SEQUENCE LISTING

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Li, Ning

<120> USE OF LC-MS/MS TO QUANTITATE PROTEIN BIOMARKERS

<130> REGE-015/001WO

<150> US 62/715,973

<151> 2018-08-08

<160> 41

<170> PatentIn version 3.5

<210> 1

<211> 245

<212> PRT

<213> Homo sapiens

<400> 1

Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser
1 5 10 15

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

Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys
35 40 45

Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln
50 55 60

Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly
65 70 75 80

Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile
85 90 95

Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln
100 105 110

Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly

115

120

125

Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr
 130 135 140

Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr
 145 150 155 160

Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val
 165 170 175

Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr
 180 185 190

Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln
 195 200 205

Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly
 210 215 220

His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu
 225 230 235 240

Ile Phe Pro Ser Ala
 245

<210> 2
 <211> 253
 <212> PRT
 <213> Homo sapiens

<400> 2

Met Met Met Lys Ile Pro Trp Gly Ser Ile Pro Val Leu Met Leu Leu
 1 5 10 15

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

Gly Pro Pro Ala Ile Pro Gly Ile Pro Gly Ile Pro Gly Thr Pro Gly
 35 40 45

Pro Asp Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu
50 55 60

Pro Gly Leu Ala Gly Asp His Gly Glu Phe Gly Glu Lys Gly Asp Pro
65 70 75 80

Gly Ile Pro Gly Asn Pro Gly Lys Val Gly Pro Lys Gly Pro Met Gly
85 90 95

Pro Lys Gly Gly Pro Gly Ala Pro Gly Ala Pro Gly Pro Lys Gly Glu
100 105 110

Ser Gly Asp Tyr Lys Ala Thr Gln Lys Ile Ala Phe Ser Ala Thr Arg
115 120 125

Thr Ile Asn Val Pro Leu Arg Arg Asp Gln Thr Ile Arg Phe Asp His
130 135 140

Val Ile Thr Asn Met Asn Asn Tyr Glu Pro Arg Ser Gly Lys Phe
145 150 155 160

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

Arg Gly Asn Leu Cys Val Asn Leu Met Arg Gly Arg Glu Arg Ala Gln
180 185 190

Lys Val Val Thr Phe Cys Asp Tyr Ala Tyr Asn Thr Phe Gln Val Thr
195 200 205

Thr Gly Gly Met Val Leu Lys Leu Glu Gln Gly Glu Asn Val Phe Leu
210 215 220

Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Met Glu Gly Ala Asn Ser
225 230 235 240

Ile Phe Ser Gly Phe Leu Leu Phe Pro Asp Met Glu Ala
245 250

<210> 3

<211> 245

<212> PRT
<213> Homo sapiens

<400> 3

Met Asp Val Gly Pro Ser Ser Leu Pro His Leu Gly Leu Lys Leu Leu
1 5 10 15

Leu Leu Leu Leu Leu Leu Pro Leu Arg Gly Gln Ala Asn Thr Gly Cys
20 25 30

Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Ala Pro Gly Lys Asp
35 40 45

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

Ile Pro Gly Ile Arg Gly Pro Lys Gly Gln Lys Gly Glu Pro Gly Leu
65 70 75 80

Pro Gly His Pro Gly Lys Asn Gly Pro Met Gly Pro Pro Gly Met Pro
85 90 95

Gly Val Pro Gly Pro Met Gly Ile Pro Gly Glu Pro Gly Glu Glu Gly
100 105 110

Arg Tyr Lys Gln Lys Phe Gln Ser Val Phe Thr Val Thr Arg Gln Thr
115 120 125

His Gln Pro Pro Ala Pro Asn Ser Leu Ile Arg Phe Asn Ala Val Leu
130 135 140

Thr Asn Pro Gln Gly Asp Tyr Asp Thr Ser Thr Gly Lys Phe Thr Cys
145 150 155 160

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

Asn Leu Cys Val Leu Leu Tyr Arg Ser Gly Val Lys Val Val Thr Phe
180 185 190

Cys Gly His Thr Ser Lys Thr Asn Gln Val Asn Ser Gly Gly Val Leu

195

200

205

Leu Arg Leu Gln Val Gly Glu Glu Val Trp Leu Ala Val Asn Asp Tyr
 210 215 220

Tyr Asp Met Val Gly Ile Gln Gly Ser Asp Ser Val Phe Ser Gly Phe
 225 230 235 240

Leu Leu Phe Pro Asp
 245

<210> 4

<211> 245

<212> PRT

<213> Macaca fascicularis

<400> 4

Met Glu Gly Pro Gln Gly Trp Leu Val Val Cys Val Leu Ala Ile Ser
 1 5 10 15

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

Asn Gly Val Ala Gly Arg Pro Gly Arg Pro Gly Arg Pro Gly Leu Lys
 35 40 45

Gly Glu Arg Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln
 50 55 60

Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly
 65 70 75 80

Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Asp Arg Gly Ile
 85 90 95

Pro Gly Ile Lys Gly Ile Lys Gly Asn Pro Gly Asn Ile Lys Asp Gln
 100 105 110

Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly
 115 120 125

Asn Val Val Ile Phe Asp Met Val Ile Thr Asn Gln Glu Glu Pro Tyr
130 135 140

Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr
145 150 155 160

Phe Thr Phe Gln Val Val Ser Glu Arg Glu Ile Cys Leu Ser Ile Val
165 170 175

Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr
180 185 190

Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln
195 200 205

Leu Gln Arg Gly Asp Gln Val Trp Val Glu Lys Asp Pro Arg Lys Gly
210 215 220

Asn Ile Tyr Gln Gly Leu Glu Ala Asp Ser Val Phe Ser Gly Phe Leu
225 230 235 240

Ile Phe Pro Ser Ser
245

<210> 5
<211> 253
<212> PRT
<213> Macaca fascicularis

<400> 5

Met Met Met Lys Ile Leu Trp Gly Ser Ile Pro Val Leu Met Leu Leu
1 5 10 15

Leu Leu Leu Gly Leu Leu Asp Val Ser Trp Ala Gln Gly Ser Cys Thr
20 25 30

Gly Pro Pro Ala Ile Pro Gly Thr Pro Gly Ile Pro Gly Thr Pro Gly
35 40 45

Ser Asp Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu
50 55 60

Pro Gly Leu Ala Gly Asp His Gly Glu Phe Gly Glu Lys Gly Asp Pro
65 70 75 80

Gly Ile Pro Gly Asn Pro Gly Lys Val Gly Pro Lys Gly Pro Met Gly
85 90 95

Pro Lys Gly Gly Pro Gly Ala Pro Gly Ala Pro Gly Pro Lys Gly Glu
100 105 110

Ser Gly Asp Tyr Lys Ala Thr Gln Lys Ile Ala Phe Ser Ala Thr Arg
115 120 125

Thr Val Asn Thr Pro Leu Arg Arg Asp Gln Thr Ile Arg Phe Asp His
130 135 140

Val Ile Thr Asn Met Asn Asn Asn Tyr Glu Pro Arg Ser Gly Lys Phe
145 150 155 160

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

Arg Gly Asn Leu Cys Val Lys Leu Met Arg Gly Arg Glu Arg Pro Gln
180 185 190

Lys Val Val Thr Phe Cys Asp Tyr Ala Tyr Asn Thr Phe Gln Val Thr
195 200 205

Thr Gly Gly Met Val Leu Lys Leu Glu Gln Gly Glu Asn Val Phe Leu
210 215 220

Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Met Glu Gly Ala Asn Ser
225 230 235 240

Ile Phe Ser Gly Phe Leu Leu Phe Pro Asp Val Glu Ala
245 250

<210> 6

<211> 245

<212> PRT

<213> Macaca fascicularis

<400> 6

Met Asp Val Gly Pro Ser Ser Leu Pro His Leu Gly Leu Lys Leu Leu
1 5 10 15

Leu Leu Leu Leu Leu Leu Pro Leu Arg Gly Gln Ala Asn Thr Gly Cys
20 25 30

Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Ala Pro Gly Lys Asp
35 40 45

Gly His Asp Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Ile Pro Ala
50 55 60

Ile Pro Gly Thr Arg Gly Pro Lys Gly Gln Lys Gly Glu Pro Gly Thr
65 70 75 80

Pro Gly His Pro Gly Lys Asn Gly Pro Met Gly Pro Pro Gly Met Pro
85 90 95

Gly Val Pro Gly Pro Met Gly Ile Pro Gly Glu Pro Gly Glu Glu Gly
100 105 110

Arg Tyr Lys Gln Lys Tyr Gln Ser Val Phe Thr Val Ala Arg Gln Thr
115 120 125

His Gln Pro Pro Ala Pro Asn Ser Leu Ile Arg Phe Asn Ala Val Leu
130 135 140

Thr Asn Pro Gln Gly Asp Tyr Asp Thr Ser Thr Gly Lys Phe Thr Cys
145 150 155 160

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

Asn Leu Cys Val Leu Leu Tyr Arg Gly Gly Val Lys Val Val Thr Phe
180 185 190

Cys Gly His Thr Ser Gln Ala Asn Gln Val Asn Ser Gly Gly Val Leu
195 200 205

Leu Arg Leu Gln Val Gly Glu Glu Val Trp Leu Gly Val Asn Asp Tyr
210 215 220

Tyr Asp Met Val Gly Ile Gln Gly Ser Asp Ser Val Phe Ser Gly Phe
225 230 235 240

Leu Leu Phe Pro Asp
245

<210> 7
<211> 245
<212> PRT
<213> Macaca mulatta

<400> 7

Met Glu Gly Pro Gln Gly Trp Leu Val Val Cys Val Leu Ala Ile Ser
1 5 10 15

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

Asn Gly Val Ala Gly Arg Pro Gly Arg Pro Gly Arg Pro Gly Leu Lys
35 40 45

Gly Glu Arg Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln
50 55 60

Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly
65 70 75 80

Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Asp Arg Gly Ile
85 90 95

Pro Gly Ile Lys Gly Ile Lys Gly Asn Pro Gly Asn Ile Lys Asp Gln
100 105 110

Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly
115 120 125

Asn Val Val Ile Phe Asp Met Val Ile Thr Asn Gln Glu Glu Pro Tyr
130 135 140

Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr
145 150 155 160

Phe Thr Phe Gln Val Val Ser Glu Arg Glu Ile Cys Leu Ser Ile Val
165 170 175

Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr
180 185 190

Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln
195 200 205

Leu Gln Arg Gly Asp Gln Val Trp Val Glu Lys Asp Pro Arg Lys Gly
210 215 220

Asn Ile Tyr Gln Gly Leu Glu Ala Asp Ser Val Phe Ser Gly Phe Leu
225 230 235 240

Ile Phe Pro Ser Thr
245

<210> 8
<211> 253
<212> PRT
<213> Macaca mulatta

<400> 8

Met Met Met Lys Ile Leu Trp Gly Ser Ile Pro Val Leu Met Leu Leu
1 5 10 15

Leu Leu Leu Gly Leu Leu Asp Val Ser Trp Ala Gln Gly Ser Cys Thr
20 25 30

Gly Pro Pro Ala Ile Pro Gly Thr Pro Gly Ile Pro Gly Thr Pro Gly
35 40 45

Ser Asp Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu
50 55 60

Pro Gly Leu Ala Gly Asp His Gly Glu Phe Gly Glu Lys Gly Asp Pro
65 70 75 80

Gly Ile Pro Gly Asn Pro Gly Lys Val Gly Pro Lys Gly Pro Met Gly
85 90 95

Pro Lys Gly Gly Pro Gly Ala Pro Gly Ala Pro Gly Pro Lys Gly Glu
100 105 110

Ser Gly Asp Tyr Lys Ala Thr Gln Lys Ile Ala Phe Ser Ala Thr Arg
115 120 125

Thr Ile Asn Thr Pro Leu Arg Arg Asp Gln Thr Ile Arg Phe Asp His
130 135 140

Val Ile Thr Asn Met Asn Asn Asn Tyr Glu Pro Arg Ser Gly Lys Phe
145 150 155 160

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

Arg Gly Asn Leu Cys Val Lys Leu Met Arg Gly Arg Glu Arg Pro Gln
180 185 190

Lys Val Val Thr Phe Cys Asp Tyr Ala Tyr Asn Thr Phe Gln Val Thr
195 200 205

Thr Gly Gly Met Val Leu Lys Leu Glu Gln Gly Glu Asn Val Phe Leu
210 215 220

Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Met Glu Gly Ala Asn Ser
225 230 235 240

Ile Phe Ser Gly Phe Leu Leu Phe Pro Asp Val Glu Ala
245 250

<210> 9

<211> 245

<212> PRT

<213> Macaca mulatta

<400> 9

Met Asp Val Gly Pro Ser Ser Leu Pro His Leu Gly Leu Lys Leu Leu

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

Tyr Asp Met Val Gly Ile Gln Gly Ser Asp Ser Val Phe Ser Gly Phe
225 230 235 240

Leu Leu Phe Pro Asp
245

<210> 10
<211> 245
<212> PRT
<213> Mus musculus

<400> 10

Met Glu Thr Ser Gln Gly Trp Leu Val Ala Cys Val Leu Thr Met Thr
1 5 10 15

Leu Val Trp Thr Val Ala Glu Asp Val Cys Arg Ala Pro Asn Gly Lys
20 25 30

Asp Gly Ala Pro Gly Asn Pro Gly Arg Pro Gly Arg Pro Gly Leu Lys
35 40 45

Gly Glu Arg Gly Glu Pro Gly Ala Ala Gly Ile Arg Thr Gly Ile Arg
50 55 60

Gly Phe Lys Gly Asp Pro Gly Glu Ser Gly Pro Pro Gly Lys Pro Gly
65 70 75 80

Asn Val Gly Leu Pro Gly Pro Ser Gly Pro Leu Gly Asp Ser Gly Pro
85 90 95

Gln Gly Leu Lys Gly Val Lys Gly Asn Pro Gly Asn Ile Arg Asp Gln
100 105 110

Pro Arg Pro Ala Phe Ser Ala Ile Arg Gln Asn Pro Met Thr Leu Gly
115 120 125

Asn Val Val Ile Phe Asp Lys Val Leu Thr Asn Gln Glu Ser Pro Tyr
130 135 140

Gln Asn His Thr Gly Arg Phe Ile Cys Ala Val Pro Gly Phe Tyr Tyr
145 150 155 160

Phe Asn Phe Gln Val Ile Ser Lys Trp Asp Leu Cys Leu Phe Ile Lys
165 170 175

Ser Ser Ser Gly Gly Gln Pro Arg Asp Ser Leu Ser Phe Ser Asn Thr
180 185 190

Asn Asn Lys Gly Leu Phe Gln Val Leu Ala Gly Gly Thr Val Leu Gln
195 200 205

Leu Arg Arg Gly Asp Glu Val Trp Ile Glu Lys Asp Pro Ala Lys Gly
210 215 220

Arg Ile Tyr Gln Gly Thr Glu Ala Asp Ser Ile Phe Ser Gly Phe Leu
225 230 235 240

Ile Phe Pro Ser Ala
245

<210> 11
<211> 253
<212> PRT
<213> Mus musculus

<400> 11

Met Lys Thr Gln Trp Gly Glu Val Trp Thr His Leu Leu Leu Leu Leu
1 5 10 15

Leu Gly Phe Leu His Val Ser Trp Ala Gln Ser Ser Cys Thr Gly Pro
20 25 30

Pro Gly Ile Pro Gly Ile Pro Gly Val Pro Gly Val Pro Gly Ser Asp
35 40 45

Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly
50 55 60

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

Pro Gly Thr Pro Gly Lys Val Gly Pro Lys Gly Pro Val Gly Pro Lys

85

90

95

Gly Thr Pro Gly Pro Ser Gly Pro Arg Gly Pro Lys Gly Asp Ser Gly
 100 105 110

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

Asn Ser Pro Leu Arg Pro Asn Gln Val Ile Arg Phe Glu Lys Val Ile
 130 135 140

Thr Asn Ala Asn Glu Asn Tyr Glu Pro Arg Asn Gly Lys Phe Thr Cys
 145 150 155 160

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

Asn Leu Cys Val Asn Leu Val Arg Gly Arg Asp Arg Asp Ser Met Gln
 180 185 190

Lys Val Val Thr Phe Cys Asp Tyr Ala Gln Asn Thr Phe Gln Val Thr
 195 200 205

Thr Gly Gly Val Val Leu Lys Leu Glu Gln Glu Glu Val Val His Leu
 210 215 220

Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Ile Glu Gly Ala Asn Ser
 225 230 235 240

Ile Phe Thr Gly Phe Leu Leu Phe Pro Asp Met Asp Ala
 245 250

<210> 12

<211> 246

<212> PRT

<213> Mus musculus

<400> 12

Met Val Val Gly Pro Ser Cys Gln Pro Pro Cys Gly Leu Cys Leu Leu
 1 5 10 15

Leu Leu Phe Leu Leu Ala Leu Pro Leu Arg Ser Gln Ala Ser Ala Gly
20 25 30

Cys Tyr Gly Ile Pro Gly Met Pro Gly Met Pro Gly Ala Pro Gly Lys
35 40 45

Asp Gly His Asp Gly Leu Gln Gly Pro Lys Gly Glu Pro Gly Ile Pro
50 55 60

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

Met Pro Gly His Arg Gly Lys Asn Gly Pro Arg Gly Thr Ser Gly Leu
85 90 95

Pro Gly Asp Pro Gly Pro Arg Gly Pro Pro Gly Glu Pro Gly Val Glu
100 105 110

Gly Arg Tyr Lys Gln Lys His Gln Ser Val Phe Thr Val Thr Arg Gln
115 120 125

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

Val Thr Asn Pro Gln Gly His Tyr Asn Pro Ser Thr Gly Lys Phe Thr
145 150 155 160

Cys Glu Val Pro Gly Leu Tyr Tyr Phe Val Tyr Tyr Thr Ser His Thr
165 170 175

Ala Asn Leu Cys Val His Leu Asn Leu Asn Leu Ala Arg Val Ala Ser
180 185 190

Phe Cys Asp His Met Phe Asn Ser Lys Gln Val Ser Ser Gly Gly Val
195 200 205

Leu Leu Arg Leu Gln Arg Gly Asp Glu Val Trp Leu Ser Val Asn Asp
210 215 220

Tyr Asn Gly Met Val Gly Ile Glu Gly Ser Asn Ser Val Phe Ser Gly
225 230 235 240

Phe Leu Leu Phe Pro Asp
245

<210> 13
<211> 245
<212> PRT
<213> Rattus norvegicus

<400> 13

Met Glu Thr Ser Gln Gly Trp Leu Val Ala Cys Val Leu Ala Val Thr
1 5 10 15

Leu Val Trp Thr Val Ala Glu Asp Val Cys Arg Ala Pro Asn Gly Lys
20 25 30

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

Gly Glu Arg Gly Glu Pro Gly Ala Ala Gly Ile Arg Thr Gly Ile Arg
50 55 60

Gly Leu Lys Gly Asp Met Gly Glu Ser Gly Pro Pro Gly Lys Pro Gly
65 70 75 80

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

Gln Gly Leu Lys Gly Val Lys Gly Asn Pro Gly Asn Ile Arg Asp Gln
100 105 110

Pro Arg Pro Ala Phe Ser Ala Ile Arg Gln Asn Pro Pro Thr Tyr Gly
115 120 125

Asn Val Val Val Phe Asp Lys Val Leu Thr Asn Gln Glu Asn Pro Tyr
130 135 140

Gln Asn Arg Thr Gly His Phe Ile Cys Ala Val Pro Gly Phe Tyr Tyr
145 150 155 160

Phe Thr Phe Gln Val Ile Ser Lys Trp Asp Leu Cys Leu Ser Ile Val

165

170

175

Ser Ser Ser Arg Gly Gln Pro Arg Asn Ser Leu Gly Phe Cys Asp Thr
 180 185 190

Asn Ser Lys Gly Leu Phe Gln Val Leu Ala Gly Gly Thr Val Leu Gln
 195 200 205

Leu Gln Arg Gly Asp Glu Val Trp Ile Glu Lys Asp Pro Ala Lys Gly
 210 215 220

Arg Ile Tyr Gln Gly Thr Glu Ala Asp Ser Ile Phe Ser Gly Phe Leu
 225 230 235 240

Ile Phe Pro Ser Ala
 245

<210> 14
 <211> 253
 <212> PRT
 <213> Rattus norvegicus

<400> 14

Met Lys Thr Gln Trp Ser Glu Ile Leu Thr Pro Leu Leu Leu Leu Leu
 1 5 10 15

Leu Gly Leu Leu His Val Ser Trp Ala Gln Ser Ser Cys Thr Gly Ser
 20 25 30

Pro Gly Ile Pro Gly Val Pro Gly Ile Pro Gly Val Pro Gly Ser Asp
 35 40 45

Gly Lys Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly
 50 55 60

Leu Ala Gly Asp His Gly Glu Leu Gly Glu Lys Gly Asp Ala Gly Ile
 65 70 75 80

Pro Gly Ile Pro Gly Lys Val Gly Pro Lys Gly Pro Val Gly Pro Lys
 85 90 95

Gly Ala Pro Gly Pro Pro Gly Pro Arg Gly Pro Lys Gly Gly Ser Gly
100 105 110

Asp Tyr Lys Ala Thr Gln Lys Val Ala Phe Ser Ala Leu Arg Thr Val
115 120 125

Asn Ser Ala Leu Arg Pro Asn Gln Ala Ile Arg Phe Glu Lys Val Ile
130 135 140

Thr Asn Val Asn Asp Asn Tyr Glu Pro Arg Ser Gly Lys Phe Thr Cys
145 150 155 160

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

Asn Leu Cys Val Asn Ile Val Arg Gly Arg Asp Arg Asp Arg Met Gln
180 185 190

Lys Val Leu Thr Phe Cys Asp Tyr Ala Gln Asn Thr Phe Gln Val Thr
195 200 205

Thr Gly Gly Val Val Leu Lys Leu Glu Gln Glu Glu Val Val His Leu
210 215 220

Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Val Glu Gly Ala Asn Ser
225 230 235 240

Ile Phe Thr Gly Phe Leu Leu Phe Pro Asp Met Asp Val
245 250

<210> 15
<211> 245
<212> PRT
<213> Rattus norvegicus

<400> 15

Met Val Val Gly Thr Ser Cys Gln Pro Gln His Gly Leu Tyr Leu Leu
1 5 10 15

Leu Leu Leu Leu Ala Leu Pro Leu Arg Ser Gln Ala Asn Ala Gly Cys
20 25 30

Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Thr Pro Gly Lys Asp
35 40 45

Gly His Asp Gly Leu Gln Gly Pro Lys Gly Glu Pro Gly Ile Pro Ala
50 55 60

Ile Pro Gly Thr Gln Gly Pro Lys Gly Gln Lys Gly Glu Pro Gly Met
65 70 75 80

Pro Gly His Arg Gly Lys Asn Gly Pro Met Gly Thr Ser Gly Ser Pro
85 90 95

Gly Asp Pro Gly Pro Arg Gly Pro Pro Gly Glu Pro Gly Glu Glu Gly
100 105 110

Arg Tyr Lys Gln Lys His Gln Ser Val Phe Thr Val Thr Arg Gln Thr
115 120 125

Ala Gln Tyr Pro Ala Ala Asn Gly Leu Val Lys Phe Asn Ser Ala Ile
130 135 140

Thr Asn Pro Gln Gly Asp Tyr Asn Thr Asn Thr Gly Lys Phe Thr Cys
145 150 155 160

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

Asn Leu Cys Val Gln Leu Leu Leu Asn Asn Ala Lys Val Thr Ser Phe
180 185 190

Cys Asp His Met Ser Asn Ser Lys Gln Val Ser Ser Gly Gly Val Leu
195 200 205

Leu Arg Leu Gln Arg Gly Asp Glu Val Trp Leu Ala Val Asn Asp Tyr
210 215 220

Asn Gly Met Val Gly Thr Glu Gly Ser Asp Ser Val Phe Ser Gly Phe
225 230 235 240

Leu Leu Phe Pro Asp

<210> 16
 <211> 245
 <212> PRT
 <213> Canis lupus

<400> 16

Met Glu Ala Pro Trp Gly Trp Leu Ala Leu Cys Val Leu Ala Thr Ser
 1 5 10 15

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

Asp Gly Ala Ala Gly Thr Pro Gly Arg Pro Gly Arg Pro Gly Leu Lys
 35 40 45

Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Met Arg Thr Gly Ile Arg
 50 55 60

Gly Leu Lys Gly Asp Gln Gly Asp Pro Gly Pro Pro Gly Asn Pro Gly
 65 70 75 80

Asn Met Gly Phe Pro Gly Pro Ser Gly Leu Met Gly Leu Pro Gly Ile
 85 90 95

Pro Gly Arg Arg Gly Pro Lys Gly Asn Pro Gly Asn Ile Arg Asp Gln
 100 105 110

Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Thr Gly Gly
 115 120 125

Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Gly Pro Tyr
 130 135 140

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

Phe Thr Phe Gln Val Val Ser Lys Trp Asp Ile Cys Leu Ser Ile Val
 165 170 175

Ser Ser Gly Arg Ala Gln Ile Arg Arg Ser Leu Gly Phe Cys Asp Thr
180 185 190

Asn Ser Lys Gly Ile Phe Gln Val Val Ser Gly Gly Met Ala Leu Gln
195 200 205

Leu Gln Gln Gly Asp Gln Val Trp Ile Glu Lys Asp Pro Ile Lys Gly
210 215 220

Arg Ile Tyr Gln Gly Pro Glu Ala Asp Ser Ile Phe Ser Gly Phe Leu
225 230 235 240

Ile Phe Pro Ser Leu
245

<210> 17
<211> 250
<212> PRT
<213> Canis lupus

<400> 17

Met Lys Thr Pro Arg Gly Gly Ile Leu Ala Leu Leu Leu Pro Leu Leu
1 5 10 15

Leu Gly Leu Leu Glu Val Ser Trp Ala Gln Ser Cys Thr Gly His Pro
20 25 30

Ala Ile Pro Gly Ile Pro Gly Ile Pro Gly Ala Pro Gly Thr Asp Gly
35 40 45

Thr Pro Gly Thr Pro Gly Thr Lys Gly Glu Lys Gly Leu Pro Gly Leu
50 55 60

Ala Gly Asp His Gly Glu Phe Gly Glu Lys Gly Asp Pro Gly Ile Pro
65 70 75 80

Gly Thr Pro Gly Lys Val Gly Pro Lys Gly Pro Val Gly Pro Lys Gly
85 90 95

Ser Pro Gly Pro Pro Gly Ala Arg Gly Ala Lys Gly Glu Ser Gly Asp
100 105 110

Tyr Lys Ala Thr Gln Lys Ile Ala Phe Ser Ala Met Arg Thr Ile Asn
115 120 125

Ile Pro Leu Arg Arg Asp Gln Thr Ile Arg Phe Asp His Ile Val Thr
130 135 140

Asn Glu Asn Arg Asn Tyr Glu Pro Arg Ser Gly Lys Phe Thr Cys Asn
145 150 155 160

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

Leu Cys Val Asn Val Met Arg Gly Arg Glu Arg Met Gln Lys Val Val
180 185 190

Thr Phe Cys Asp Tyr Val Gln Asn Thr Phe Gln Val Thr Thr Gly Ser
195 200 205

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

Asp Lys Asn Ser Leu Leu Gly Met Glu Gly Ala Asn Ser Ile Phe Ser
225 230 235 240

Gly Phe Leu Leu Phe Pro Asp Ala Glu Ala
245 250

<210> 18
<211> 245
<212> PRT
<213> Canis lupus

<400> 18

Met Asp Thr Gly Pro Ser Ser Trp Pro His Leu Gly Leu Asn Leu Leu
1 5 10 15

Leu Leu Leu Leu Ala Leu Pro Leu Gly Gly Gln Ala Ser Thr Gly Cys
20 25 30

Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Ala Pro Gly Lys Asp
35 40 45

Gly His Asp Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Ile Pro Ala
50 55 60

Ile Pro Gly Thr Arg Gly Pro Lys Gly Gln Lys Gly Glu Pro Gly Thr
65 70 75 80

Pro Gly Tyr Pro Gly Lys Asn Gly Pro Met Gly Thr Pro Gly Ile Pro
85 90 95

Gly Val Pro Gly Pro Val Gly Pro Pro Gly Glu Pro Gly Glu Glu Gly
100 105 110

Arg Tyr Lys Gln Lys His Gln Ser Val Phe Thr Val Thr Arg Gln Thr
115 120 125

Ala Gln Tyr Pro Leu Ala Asn Asn Leu Val Lys Phe Asn Thr Val Ile
130 135 140

Thr Asn Pro Gln Gly Asp Tyr Asp Thr Ser Thr Gly Lys Phe Thr Cys
145 150 155 160

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

Asn Leu Cys Val His Leu Tyr Arg Ser Gly Thr Arg Val Thr Thr Phe
180 185 190

Cys Asp His Met Ser Asn Ser Lys Gln Val Ser Ser Gly Gly Val Leu
195 200 205

Leu Arg Leu Gln Met Gly Glu Gln Val Trp Leu Ala Val Asn Asp Tyr
210 215 220

Asn Gly Met Val Gly Thr Glu Gly Ser Asp Ser Val Phe Ser Gly Phe
225 230 235 240

Leu Leu Phe Pro Asp
245

<210> 19
<211> 247
<212> PRT
<213> Danio rerio

<400> 19

Met Gln Pro Ser Ala Phe Phe Ala Phe Leu Trp Ala Gly Ala Leu Phe
1 5 10 15

Pro Phe Ser Phe Cys Gln Asp Glu Cys Val Lys His Gly Arg Asn Gly
20 25 30

Ala Asp Gly Pro Asn Gly Arg Asp Gly Leu Pro Gly Pro Lys Gly Glu
35 40 45

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

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

Leu Glu Gly Leu Met Gly Ala Ile Gly Pro Arg Gly Pro Leu Gly Pro
85 90 95

Ala Gly Pro Arg Gly Ser Ser Val Gly Ala Asp Gly Ala Lys Ala Ser
100 105 110

Glu Lys Pro Ala Phe Ser Val Leu Arg Asn Glu Ala Ser Gln Ala Gln
115 120 125

Tyr Lys Gln Pro Val Thr Phe Asn Asp Lys Leu Ser Asp Ala Asn Asp
130 135 140

Asp Phe Gln Ile Lys Thr Gly Tyr Phe Thr Cys Lys Val Pro Gly Val
145 150 155 160

Tyr Tyr Phe Val Phe His Ala Ser Ser Glu Gly Arg Leu Cys Leu Arg
165 170 175

Leu Lys Ser Thr Ser Ala Pro Pro Val Ser Leu Ser Phe Cys Asp Phe
180 185 190

Asn Ser Lys Ser Val Ser Leu Val Val Ser Gly Gly Ala Val Leu Thr
195 200 205

Leu Leu Lys Gly Asp Lys Val Trp Ile Glu Pro Phe Ala Gly Asp Gly
210 215 220

Gly Val Gly Gln Met Pro Lys Arg Leu Tyr Ala Val Phe Asn Gly Phe
225 230 235 240

Leu Ile Tyr Arg Asn Ala Glu
245

<210> 20
<211> 242
<212> PRT
<213> Danio rerio

<400> 20

Met Leu Phe Ala Leu Met Ser Ala His Val Val Pro Gln Leu Ala Ile
1 5 10 15

Met Leu Leu Leu Val Thr Ser Ser Met Ser Glu Thr Cys Ala Gly Asn
20 25 30

Lys Gly Phe Pro Gly Thr Pro Gly Ile Pro Gly Val Pro Gly Thr Asp
35 40 45

Gly Lys Asp Gly Ala Lys Gly Glu Lys Gly Asp Pro Gly Glu Asn Glu
50 55 60

Val Gln Met Thr Gly Pro Lys Gly Asp Pro Gly Lys Pro Gly Leu Pro
65 70 75 80

Gly Arg Pro Gly Val Lys Gly Pro Glu Gly Pro Gln Gly Pro Pro Gly
85 90 95

Pro Pro Gly Pro Lys Gly Gln Arg Gly Val Leu Ser Gly Lys Val Ala
100 105 110

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

Lys Ile Leu Gln Asp Lys Leu Val Val Phe Asp Val Pro Leu Ile Thr
130 135 140

Gly Ile Asp Gly Val Leu Asp Gly Glu Gly Tyr Phe Asp Val Thr Ile
145 150 155 160

Thr Gly Met Tyr Tyr Ile Ser Tyr Gln Ile Ser Phe Gln Gln Ser Ala
165 170 175

Cys Leu Lys Ile Gln Ile Gly Ala Glu Glu Lys Val Lys Phe Cys Asp
180 185 190

Ser Pro Lys Leu Ile Leu Gly Thr Ala Ala Ser Val Val Leu Lys Leu
195 200 205

Asn Lys Gly Asp Lys Val Ser Val Gln Ser Thr Gly Glu Ser Thr Val
210 215 220

Phe Ser Arg Asp Thr Asp Cys Thr Phe Thr Gly Phe Met Leu Phe Pro
225 230 235 240

Ile Lys

<210> 21
<211> 244
<212> PRT
<213> Danio rerio

<400> 21

Met Phe Gly Gly His Leu Ile Leu Val Ser Leu Leu Ser Ala Ser Leu
1 5 10 15

Cys Leu Cys Leu Ala Ser Ala Asp Thr Cys Pro Ala Gly Ala Met Pro
20 25 30

Gly Leu Pro Gly Ile Pro Gly Phe Pro Gly Arg Asp Gly Arg Gln Gly
35 40 45

Met Lys Gly Glu Lys Gly Asp Leu Gly Ile Pro Ile Lys Pro Gly Asp

50

55

60

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

Gly Lys Arg Gly Pro His Gly Asp Pro Gly Ile Met Gly Pro Pro Gly
 85 90 95

Pro Pro Gly Glu Pro Gly Glu Ala Gly Leu Val Asp Val Ser Gly Ser
 100 105 110

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

Asp Ala Asn Lys Val Ile Arg Phe Ser Lys Val Ile Thr Asn Pro Gln
 130 135 140

Gly His Phe Ser Thr Asp Glu Ser Lys Phe Val Cys Lys Ile Pro Gly
 145 150 155 160

Thr Tyr Tyr Phe Val Leu His Ala Ser Ser His Asp Lys Lys Leu Cys
 165 170 175

Val Ile Leu Val His Asp Asp Lys Asn Leu Val Ser Phe Cys Asp His
 180 185 190

Thr Gln Arg Gly Ser Gln Gln Val Ser Ser Gly Gly Leu Ser Leu Tyr
 195 200 205

Leu Lys Glu Asn Glu Lys Val Trp Leu Met Thr Asn Ala Leu Asn Gly
 210 215 220

Met Tyr Ala Thr Ala Asp Arg Ala Asp Ser Val Phe Ser Gly Phe Leu
 225 230 235 240

Ile His Ala His

<210> 22

<211> 13

<212> PRT

<213> Macaca fascicularis

<400> 22

Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg
1 5 10

<210> 23

<211> 11

<212> PRT

<213> Macaca fascicularis

<400> 23

Asp Gln Pro Arg Pro Ala Phe Ser Ala Ile Arg
1 5 10

<210> 24

<211> 28

<212> PRT

<213> Macaca fascicularis

<400> 24

Asn Pro Pro Met Gly Gly Asn Val Val Ile Phe Asp Thr Val Ile Thr
1 5 10 15

Asn Gln Glu Glu Pro Tyr Gln Asn His Ser Gly Arg
20 25

<210> 25

<211> 30

<212> PRT

<213> Macaca fascicularis

<400> 25

Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr Phe Thr Phe Gln Val Leu
1 5 10 15

Ser Gln Trp Glu Ile Cys Leu Ser Ile Val Ser Ser Ser Arg
20 25 30

<210> 26

<211> 10

<212> PRT

<213> Macaca fascicularis

<400> 26

Ser Leu Gly Phe Cys Asp Thr Thr Asn Lys
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<210> 27

<211> 26

<212> PRT

<213> Macaca fascicularis

<400> 27

Gly Leu Phe Val Val Ser Gly Gly Met Val Leu Gln Leu Gln Gln Gly
1 5 10 15

Asp Gln Val Trp Val Glu Lys Asp Pro Lys
20 25

<210> 28

<211> 22

<212> PRT

<213> Macaca fascicularis

<400> 28

Gly His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe
1 5 10 15

Leu Ile Phe Pro Ser Ala
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<210> 29

<211> 7

<212> PRT

<213> Macaca fascicularis

<400> 29

Ile Ala Phe Ser Ala Thr Arg
1 5

<210> 30

<211> 8

<212> PRT

<213> Macaca fascicularis

<400> 30

Thr Ile Asn Val Pro Leu Arg Arg
1 5

<210> 31
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<400> 31

Phe Asp His Val Ile Thr Asn Met Asn Asn Asn Tyr Glu Pro Arg
1 5 10 15

<210> 32
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<213> Macaca fascicularis

<400> 32

Val Pro Gly Leu Tyr Tyr Phe Thr Tyr His Ala Ser Ser Arg
1 5 10

<210> 33
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Gly Asn Leu Cys Val Asn Leu Met Arg
1 5

<210> 34
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Leu Glu Gln Gly Glu Asn Val Phe Leu Gln Ala Thr Asp Lys
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Phe Gln Ser Val Phe Thr Val Thr Arg
1 5

<210> 36
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<212> PRT
<213> Macaca fascicularis

<400> 36

Gln Thr His Gln Pro Pro Ala Pro Asn Ser Leu Ile Arg
1 5 10

<210> 37
<211> 18
<212> PRT
<213> Macaca fascicularis

<400> 37

Phe Asn Ala Val Leu Thr Asn Pro Gln Gly Asp Tyr Asp Thr Ser Thr
1 5 10 15

Gly Lys

<210> 38
<211> 23
<212> PRT
<213> Macaca fascicularis

<400> 38

Val Pro Gly Leu Tyr Tyr Phe Val Tyr His Ala Ser His Thr Ala Asn
1 5 10 15

Leu Cys Val Leu Leu Tyr Arg
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<210> 39
<211> 10
<212> PRT
<213> Macaca fascicularis

<400> 39

Val Val Thr Phe Cys Gly His Thr Ser Lys

1 5 10

<210> 40
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<212> PRT
<213> Macaca fascicularis

<400> 40

Thr Asn Gln Val Asn Ser Gly Gly Val Leu Leu Arg
1 5 10

<210> 41
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<222> (5)..(5)
<223> Carbamidomethylation

<400> 41

Ser Leu Gly Phe Cys Asp Thr Thr Asn Lys
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