

SEQUENCE LISTING

<110> Osaka City Univercity & Teijin Pharma Limited

<120> Therapeutic agents for demetia

<130> AB606

<150> JP2012-124336

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<160> 48

<170> PatentIn version 3.1

<210> 1

<211> 441

<212> PRT

<213> Homo sapiens

<400> 1

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

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

Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
85 90 95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
100 105 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
115 120 125

Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
130 135 140

Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
145 150 155 160

Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
165 170 175

Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
180 185 190

Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
195 200 205

Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
210 215 220

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
225 230 235 240

Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
245 250 255

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
260 265 270

Gly Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln
275 280 285

Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly
290 295 300

Ser Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser
305 310 315 320

Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln
325 330 335

Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser
340 345 350

Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn
355 360 365

Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala
370 375 380

Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser
385 390 395 400

Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser
405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 2
<211> 412
<212> PRT
<213> Homo sapiens

<400> 2

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Ala Glu Glu Ala Gly Ile Gly
65 70 75 80

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

Arg Met Val Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys
100 105 110

Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala
115 120 125

Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala

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

Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser
370 375 380

Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala
385 390 395 400

Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
405 410

<210> 3
<211> 383
<212> PRT
<213> Homo sapiens

<400> 3

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Ala Glu Glu Ala
35 40 45

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

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

Asp Lys Lys Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro
85 90 95

Arg Gly Ala Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg
100 105 110

Ile Pro Ala Lys Thr Pro Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly
115 120 125

Glu Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser
130 135 140

Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro
145 150 155 160

Pro Thr Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys
165 170 175

Ser Pro Ser Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro Met
180 185 190

Pro Asp Leu Lys Asn Val Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu
195 200 205

Lys His Gln Pro Gly Gly Gly Lys Val Gln Ile Ile Asn Lys Lys Leu
210 215 220

Asp Leu Ser Asn Val Gln Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys
225 230 235 240

His Val Pro Gly Gly Gly Ser Val Gln Ile Val Tyr Lys Pro Val Asp
245 250 255

Leu Ser Lys Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His His
260 265 270

Lys Pro Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe
275 280 285

Lys Asp Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His
290 295 300

Val Pro Gly Gly Gly Asn Lys Lys Ile Glu Thr His Lys Leu Thr Phe
305 310 315 320

Arg Glu Asn Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile Val Tyr
325 330 335

Lys Ser Pro Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn
340 345 350

Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala
355 360 365

Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
370 375 380

<210> 4
<211> 410
<212> PRT
<213> Homo sapiens

<400> 4

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

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

Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
85 90 95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
100 105 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
115 120 125

Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
130 135 140

Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
145 150 155 160

Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
165 170 175

Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
180 185 190

Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
195 200 205

Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
 210 215 220

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
 225 230 235 240

Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
 245 250 255

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
 260 265 270

Gly Lys Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr
 275 280 285

Ser Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly
 290 295 300

Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln
 305 310 315 320

Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly
 325 330 335

Asn Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys
 340 345 350

Ala Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val
 355 360 365

Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly
 370 375 380

Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu
 385 390 395 400

Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
 405 410

<210> 5
 <211> 381
 <212> PRT
 <213> Homo sapiens

<400> 5

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Ala Glu Glu Ala Gly Ile Gly
65 70 75 80

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

Arg Met Val Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys
100 105 110

Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala
115 120 125

Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala
130 135 140

Lys Thr Pro Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro
145 150 155 160

Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr
165 170 175

Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg
180 185 190

Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser
195 200 205

Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu
210 215 220

Lys Asn Val Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln
 225 230 235 240

Pro Gly Gly Gly Lys Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser
 245 250 255

Lys Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro
 260 265 270

Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp
 275 280 285

Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro
 290 295 300

Gly Gly Gly Asn Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu
 305 310 315 320

Asn Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser
 325 330 335

Pro Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser
 340 345 350

Ser Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu
 355 360 365

Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
 370 375 380

<210> 6
 <211> 352
 <212> PRT
 <213> Homo sapiens

<400> 6

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
 1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
 20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Ala Glu Glu Ala
 35 40 45

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

275

280

285

Phe Arg Glu Asn Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile Val
290 295 300

Tyr Lys Ser Pro Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser
305 310 315 320

Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu
325 330 335

Ala Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
340 345 350

<210> 7

<211> 5

<212> PRT

<213> Mus musculus

<400> 7

Ser Phe Ala Met Asn
1 5

<210> 8

<211> 5

<212> PRT

<213> Mus musculus

<400> 8

Ser Phe Ala Leu Asn
1 5

<210> 9

<211> 19

<212> PRT

<213> Mus musculus

<400> 9

His Ile Arg Ser Lys Thr Asn Asn Tyr Ala Thr Phe Tyr Ala Asp Ser
1 5 10 15

Val Lys Asp

<210> 10

<211> 19

<212> PRT
<213> Mus musculus

<400> 10

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

Val Lys Gly

<210> 11
<211> 19
<212> PRT
<213> Mus musculus

<400> 11

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

Val Lys Asp

<210> 12
<211> 19
<212> PRT
<213> Mus musculus

<400> 12

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

Val Lys Asp

<210> 13
<211> 10
<212> PRT
<213> Mus musculus

<400> 13

Arg	Gly	Pro	Arg	Asp	Ser	Trp	Phe	Gly	Tyr
1				5					10

<210> 14
<211> 16
<212> PRT
<213> Mus musculus

<400> 14

Arg Ser Ser Gln Asn Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 15

<211> 16

<212> PRT

<213> Mus musculus

<400> 15

Arg Ser Ser Gln Asn Ile Val His Thr Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 16

<211> 7

<212> PRT

<213> Mus musculus

<400> 16

Thr Val Ser Asn Arg Phe Ser
1 5

<210> 17

<211> 9

<212> PRT

<213> Mus musculus

<400> 17

Phe Gln Gly Ser His Leu Pro Leu Thr
1 5

<210> 18

<211> 121

<212> PRT

<213> Mus musculus

<400> 18

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

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

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

Ala His Ile Arg Ser Lys Thr Asn Asn Tyr Ala Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Gln Asn Met
65 70 75 80

Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Gly Ile Tyr
85 90 95

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 19
<211> 121
<212> PRT
<213> Mus musculus

<400> 19

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

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

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

Val His Ile Arg Ser Lys Thr Asn Asn Tyr Ala Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Val Ser Arg Asp Asp Ser Gln Asn Met
65 70 75 80

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

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 20
<211> 121
<212> PRT
<213> Mus musculus

<400> 20

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

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

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

Val His Ile Arg Ser Lys Thr Asn Asn Tyr Ala Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Val Ser Arg Asp Asp Ser Gln Ser Met
65 70 75 80

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

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 21
<211> 121
<212> PRT
<213> Mus musculus

<400> 21

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

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

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

Ala His Ile Arg Ser Lys Thr Asn Asn Tyr Val Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Ser Ile Ser Arg Asp Asp Ser Gln Ser Met
65 70 75 80

Val Tyr Leu Gln Met Asn Asn Leu Gln Thr Glu Asp Thr Gly Ile Tyr
85 90 95

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 22
<211> 121
<212> PRT
<213> Mus musculus

<400> 22

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

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ser Phe
20 25 30

Ala Leu Asn Trp Val Arg Gln Ala Pro Gly Lys Ser Leu Asp Trp Val
35 40 45

Ala His Ile Arg Ser Lys Ala Asn His Tyr Val Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Val Ser Arg Asp Asp Ser Gln Ser Met
65 70 75 80

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

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 23
<211> 121
<212> PRT
<213> Mus musculus

<400> 23

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

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

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

Ala His Ile Arg Ser Lys Thr Asn Asn Tyr Val Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Ser Ile Ser Arg Asp Asp Ser Gln Ser Met
65 70 75 80

Val Tyr Leu Gln Met Asn Asn Leu Gln Thr Glu Asp Thr Gly Ile Tyr
85 90 95

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 24
<211> 121
<212> PRT
<213> Mus musculus

<400> 24

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

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

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

Ala His Ile Arg Ser Lys Ser Asn Asn Tyr Val Thr Phe Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Ile Ile Ser Arg Asp Asp Ser Gln Ser Met
65 70 75 80

Ile Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Ser Gly Ile Tyr
85 90 95

Tyr Cys Val Arg Arg Gly Pro Arg Asp Ser Trp Phe Gly Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 25
<211> 109
<212> PRT
<213> Mus musculus

<400> 25

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

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

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Val Leu Ile Tyr Thr 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 Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu
100 105

<210> 26
<211> 109

<212> PRT
<213> Mus musculus

<400> 26

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

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

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Val Leu Ile Tyr Thr 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 Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu
100 105

<210> 27
<211> 109
<212> PRT
<213> Mus musculus

<400> 27

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

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

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Val Leu Ile Tyr Thr 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 Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu
100 105

<210> 28
<211> 109
<212> PRT
<213> Mus musculus

<400> 28

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

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

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Val Leu Ile Tyr Thr 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 Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu
100 105

<210> 29
<211> 109
<212> PRT
<213> Mus musculus

<400> 29

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

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

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Val Leu Ile Tyr Thr 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 Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu
100 105

<210> 30
<211> 109
<212> PRT
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<400> 30

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

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

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Val Leu Ile Tyr Thr 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 Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu
100 105

<210> 31

<211> 8
<212> PRT
<213> Artificial

<220>
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<220>
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<222> (4)..(4)
<223> PHOSPHORYLATION

<400> 31

Asn Val Ser Ser Thr Gly Ser Cys
1 5

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<220>
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<220>
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<223> PHOSPHORYLATION

<400> 32

Gly Cys His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp
1 5 10

<210> 33
<211> 17
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<220>
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<220>
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<222> (9)..(9)
<223> PHOSPHORYLATION

<400> 33

Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val
1 5 10 15

Asp

<210> 34
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 34

Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val
1 5 10 15

Asp

<210> 35
<211> 25
<212> PRT
<213> Artificial

<220>
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<220>
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<223> PHOSPHORYLATION

<400> 35

Gly Cys Ser Gly Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr
1 5 10 15

Gly Ser Ile Asp Met Val Asp Ser Pro
20 25

<210> 36
<211> 6
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<220>
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<223> PHOSPHORYLATION

<400> 36

Gly Leu Lys Glu Ser Pro
1 5

<210> 37

<211> 10

<212> PRT

<213> Artificial

<220>

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<220>

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<222> (5)..(5)

<223> PHOSPHORYLATION

<400> 37

Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly
1 5 10

<210> 38

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<220>

<221> MOD_RES

<222> (5)..(5)

<223> PHOSPHORYLATION

<400> 38

Ser Ser Pro Gly Ser Ser Pro Gly Thr Pro Cys
1 5 10

<210> 39

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<220>

<221> MOD_RES

<222> (5)..(5)

<223> PHOSPHORYLATION

<400> 39

Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro
1 5 10

<210> 40

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<220>

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<222> (7)..(7)

<223> PHOSPHORYLATION

<400> 40

Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro
1 5 10

<210> 41

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<220>

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<222> (5)..(5)

<223> PHOSPHORYLATION

<220>

<221> MOD_RES

<222> (7)..(7)

<223> PHOSPHORYLATION

<400> 41

Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro
1 5 10

<210> 42

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

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<222> (5)..(5)

<223> PHOSPHORYLATION

<400> 42

Pro Ser Leu Pro Thr Pro Pro Thr Arg
1 5

<210> 43

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<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

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<222> (7)..(7)

<223> PHOSPHORYLATION

<400> 43

Gly Cys Ser Pro Val Val Ser Gly Asp Thr Ser
1 5 10

<210> 44

<211> 8

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<220>

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<222> (4)..(4)

<223> PHOSPHORYLATION

<400> 44

Ser Asn Val Ser Ser Thr Gly Cys
1 5

<210> 45

<211> 19
<212> PRT
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<220>
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<223> PHOSPHORYLATION

<400> 45

Pro	Arg	His	Leu	Ser	Asn	Val	Ser	Ser	Thr	Gly	Ser	Ile	Asp	Met	Val
1				5					10					15	

Asp Ser Pro

<210> 46
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 46

Pro	Arg	His	Leu	Ser	Asn	Val	Ser	Ser	Thr	Gly	Ser	Ile	Asp	Met	Val
1				5					10					15	

Asp Ser Pro

<210> 47
<211> 32
<212> PRT
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<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 47

Gly	Cys	Arg	Glu	Asn	Ala	Lys	Ala	Lys	Thr	Asp	His	Gly	Ala	Glu	Ile
1				5					10					15	

Val	Tyr	Lys	Ser	Pro	Val	Val	Ser	Gly	Asp	Thr	Ser	Pro	Arg	His	Leu
			20					25					30		

<210> 48

<211> 32

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 48

Gly	Cys	Arg	Glu	Asn	Ala	Lys	Ala	Lys	Thr	Asp	His	Gly	Ala	Glu	Ile
1				5					10					15	

Val	Tyr	Lys	Ser	Pro	Val	Val	Ser	Gly	Asp	Thr	Ser	Pro	Arg	His	Leu
			20					25					30		