

SEQUENCE LISTING

<110> Osaka City University & Teijin Pharma Limited

<120> Therapeutic agents for dementia

<130> AB606

<150> JP2012-124336

<151> 2012-05-31

<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

22

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
 <213> Mus musculus

<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>
 <223> Synthetic peptide

<220>
 <221> MOD_RES
 <222> (4).. (4)
 <223> PHOSPHORYLATION

<400> 31

Asn Val Ser Ser Thr Gly Ser Cys
 1 5

<210> 32
 <211> 14
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<220>
 <221> MOD_RES
 <222> (9).. (9)
 <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
 <212> PRT
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<220>
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<220>
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 <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>
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<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
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<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	

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<220>
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 <223> PHOSPHORYLATION

<400> 36

Gly	Leu	Lys	Glu	Ser	Pro
1				5	

<210> 37

<211> 10
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 <213> Artificial

<220>
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<220>
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 <223> PHOSPHORYLATION

<400> 37

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

<210> 38
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<400> 38

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

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<223> PHOSPHORYLATION

<400> 39

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

<210> 40

<211> 11

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<220>

<223> Synthetic peptide

<220>

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<223> PHOSPHORYLATION

<400> 40

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

<210> 41

<211> 11

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<223> PHOSPHORYLATION

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<222> (7)..(7)

<223> PHOSPHORYLATION

<400> 41

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

<210> 42
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<220>
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<400> 42

Pro Ser Leu Pro Thr Pro Pro Thr Arg
 1 5

<210> 43
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 <213> Artificial

<220>
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<220>
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<400> 43

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

<210> 44
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<220>
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<400> 44

Ser Asn Val Ser Ser Thr Gly Cys
 1 5

<210> 45
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<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
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<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
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<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
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<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

34

20

25

30