

SEQUENCE LISTING

<110> Novo Nordisk A/S

<120> DDR1-MEDIATED CELL PURIFICATION OF PANCREATIC ENDOCRINE CELLS
THROUGH THEIR PROGENITORS

<130> 7736.204-WO

<160> 5

<170> PatentIn version 3.3

<210> 1

<211> 876

<212> PRT

<213> Homo sapiens

<400> 1

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

Tyr Ala Leu Gly Met Gln Asp Arg Thr Ile Pro Asp Ser Asp Ile Ser
35 40 45

Ala Ser Ser Ser Trp Ser Asp Ser Thr Ala Ala Arg His Ser Arg Leu
50 55 60

Glu Ser Ser Asp Gly Asp Gly Ala Trp Cys Pro Ala Gly Ser Val Phe
65 70 75 80

Pro Lys Glu Glu Glu Tyr Leu Gln Val Asp Leu Gln Arg Leu His Leu
85 90 95

Val Ala Leu Val Gly Thr Gln Gly Arg His Ala Gly Gly Leu Gly Lys
100 105 110

Glu Phe Ser Arg Ser Tyr Arg Leu Arg Tyr Ser Arg Asp Gly Arg Arg
115 120 125

Trp Met Gly Trp Lys Asp Arg Trp Gly Gln Glu Val Ile Ser Gly Asn
130 135 140

Glu Asp Pro Glu Gly Val Val Leu Lys Asp Leu Gly Pro Pro Met Val

145					150					155				160
Ala	Arg	Leu	Val	Arg	Phe	Tyr	Pro	Arg	Ala	Asp	Arg	Val	Met	Ser
				165					170				175	Val
Cys	Leu	Arg	Val	Glu	Leu	Tyr	Gly	Cys	Leu	Trp	Arg	Asp	Gly	Leu
			180					185					190	Leu
Ser	Tyr	Thr	Ala	Pro	Val	Gly	Gln	Thr	Met	Tyr	Leu	Ser	Glu	Ala
		195					200					205		Val
Tyr	Leu	Asn	Asp	Ser	Thr	Tyr	Asp	Gly	His	Thr	Val	Gly	Gly	Leu
	210					215					220			Gln
Tyr	Gly	Gly	Leu	Gly	Gln	Leu	Ala	Asp	Gly	Val	Val	Gly	Leu	Asp
225					230					235				240
Phe	Arg	Lys	Ser	Gln	Glu	Leu	Arg	Val	Trp	Pro	Gly	Tyr	Asp	Tyr
				245					250					255
Gly	Trp	Ser	Asn	His	Ser	Phe	Ser	Ser	Gly	Tyr	Val	Glu	Met	Glu
			260					265					270	Phe
Glu	Phe	Asp	Arg	Leu	Arg	Ala	Phe	Gln	Ala	Met	Gln	Val	His	Cys
		275					280					285		Asn
Asn	Met	His	Thr	Leu	Gly	Ala	Arg	Leu	Pro	Gly	Gly	Val	Glu	Cys
	290					295					300			Arg
Phe	Arg	Arg	Gly	Pro	Ala	Met	Ala	Trp	Glu	Gly	Glu	Pro	Met	Arg
305					310					315				320
Asn	Leu	Gly	Gly	Asn	Leu	Gly	Asp	Pro	Arg	Ala	Arg	Ala	Val	Ser
				325					330					335
Pro	Leu	Gly	Gly	Arg	Val	Ala	Arg	Phe	Leu	Gln	Cys	Arg	Phe	Leu
			340					345					350	Phe
Ala	Gly	Pro	Trp	Leu	Leu	Phe	Ser	Glu	Ile	Ser	Phe	Ile	Ser	Asp
		355					360					365		Val
Val	Asn	Asn	Ser	Ser	Pro	Ala	Leu	Gly	Gly	Thr	Phe	Pro	Pro	Ala
	370					375					380			Pro

Trp Trp Pro Pro Gly Pro Pro Pro Thr Asn Phe Ser Ser Leu Glu Leu
385 390 395 400

Glu Pro Arg Gly Gln Gln Pro Val Ala Lys Ala Glu Gly Ser Pro Thr
405 410 415

Ala Ile Leu Ile Gly Cys Leu Val Ala Ile Ile Leu Leu Leu Leu Leu
420 425 430

Ile Ile Ala Leu Met Leu Trp Arg Leu His Trp Arg Arg Leu Leu Ser
435 440 445

Lys Ala Glu Arg Arg Val Leu Glu Glu Glu Leu Thr Val His Leu Ser
450 455 460

Val Pro Gly Asp Thr Ile Leu Ile Asn Asn Arg Pro Gly Pro Arg Glu
465 470 475 480

Pro Pro Pro Tyr Gln Glu Pro Arg Pro Arg Gly Asn Pro Pro His Ser
485 490 495

Ala Pro Cys Val Pro Asn Gly Ser Ala Tyr Ser Gly Asp Tyr Met Glu
500 505 510

Pro Glu Lys Pro Gly Ala Pro Leu Leu Pro Pro Pro Pro Gln Asn Ser
515 520 525

Val Pro His Tyr Ala Glu Ala Asp Ile Val Thr Leu Gln Gly Val Thr
530 535 540

Gly Gly Asn Thr Tyr Ala Val Pro Ala Leu Pro Pro Gly Ala Val Gly
545 550 555 560

Asp Gly Pro Pro Arg Val Asp Phe Pro Arg Ser Arg Leu Arg Phe Lys
565 570 575

Glu Lys Leu Gly Glu Gly Gln Phe Gly Glu Val His Leu Cys Glu Val
580 585 590

Asp Ser Pro Gln Asp Leu Val Ser Leu Asp Phe Pro Leu Asn Val Arg
595 600 605

Lys Gly His Pro Leu Leu Val Ala Val Lys Ile Leu Arg Pro Asp Ala
610 615 620

Thr Lys Asn Ala Arg Asn Asp Phe Leu Lys Glu Val Lys Ile Met Ser
625 630 635 640

Arg Leu Lys Asp Pro Asn Ile Ile Arg Leu Leu Gly Val Cys Val Gln
645 650 655

Asp Asp Pro Leu Cys Met Ile Thr Asp Tyr Met Glu Asn Gly Asp Leu
660 665 670

Asn Gln Phe Leu Ser Ala His Gln Leu Glu Asp Lys Ala Ala Glu Gly
675 680 685

Ala Pro Gly Asp Gly Gln Ala Ala Gln Gly Pro Thr Ile Ser Tyr Pro
690 695 700

Met Leu Leu His Val Ala Ala Gln Ile Ala Ser Gly Met Arg Tyr Leu
705 710 715 720

Ala Thr Leu Asn Phe Val His Arg Asp Leu Ala Thr Arg Asn Cys Leu
725 730 735

Val Gly Glu Asn Phe Thr Ile Lys Ile Ala Asp Phe Gly Met Ser Arg
740 745 750

Asn Leu Tyr Ala Gly Asp Tyr Tyr Arg Val Gln Gly Arg Ala Val Leu
755 760 765

Pro Ile Arg Trp Met Ala Trp Glu Cys Ile Leu Met Gly Lys Phe Thr
770 775 780

Thr Ala Ser Asp Val Trp Ala Phe Gly Val Thr Leu Trp Glu Val Leu
785 790 795 800

Met Leu Cys Arg Ala Gln Pro Phe Gly Gln Leu Thr Asp Glu Gln Val
805 810 815

Ile Glu Asn Ala Gly Glu Phe Phe Arg Asp Gln Gly Arg Gln Val Tyr
820 825 830

Leu Ser Arg Pro Pro Ala Cys Pro Gln Gly Leu Tyr Glu Leu Met Leu
835 840 845

Arg Cys Trp Ser Arg Glu Ser Glu Gln Arg Pro Pro Phe Ser Gln Leu
850 855 860

His Arg Phe Leu Ala Glu Asp Ala Leu Asn Thr Val
865 870 875

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<213> Homo sapiens

<400> 2

Met Gly Pro Glu Ala Leu Ser Ser Leu Leu Leu Leu Leu Val Ala
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Ser Gly Asp Ala Asp Met Lys Gly His Phe Asp Pro Ala Lys Cys Arg
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Tyr Ala Leu Gly Met Gln Asp Arg Thr Ile Pro Asp Ser Asp Ile Ser
35 40 45

Ala Ser Ser Ser Trp Ser Asp Ser Thr Ala Ala Arg His Ser Arg Leu
50 55 60

Glu Ser Ser Asp Gly Asp Gly Ala Trp Cys Pro Ala Gly Ser Val Phe
65 70 75 80

Pro Lys Glu Glu Glu Tyr Leu Gln Val Asp Leu Gln Arg Leu His Leu
85 90 95

Val Ala Leu Val Gly Thr Gln Gly Arg His Ala Gly Gly Leu Gly Lys
100 105 110

Glu Phe Ser Arg Ser Tyr Arg Leu Arg Tyr Ser Arg Asp Gly Arg Arg
115 120 125

Trp Met Gly Trp Lys Asp Arg Trp Gly Gln Glu Val Ile Ser Gly Asn
130 135 140

Glu Asp Pro Glu Gly Val Val Leu Lys Asp Leu Gly Pro Pro Met Val
145 150 155 160

Ala Arg Leu Val Arg Phe Tyr Pro Arg Ala Asp Arg Val Met Ser Val
165 170 175

Cys Leu Arg Val Glu Leu Tyr Gly Cys Leu Trp Arg Asp Gly Leu Leu
180 185 190

Ser Tyr Thr Ala Pro Val Gly Gln Thr Met Tyr Leu Ser Glu Ala Val
195 200 205

Tyr Leu Asn Asp Ser Thr Tyr Asp Gly His Thr Val Gly Gly Leu Gln
210 215 220

Tyr Gly Gly Leu Gly Gln Leu Ala Asp Gly Val Val Gly Leu Asp Asp
225 230 235 240

Phe Arg Lys Ser Gln Glu Leu Arg Val Trp Pro Gly Tyr Asp Tyr Val
245 250 255

Gly Trp Ser Asn His Ser Phe Ser Ser Gly Tyr Val Glu Met Glu Phe
260 265 270

Glu Phe Asp Arg Leu Arg Ala Phe Gln Ala Met Gln Val His Cys Asn
275 280 285

Asn Met His Thr Leu Gly Ala Arg Leu Pro Gly Gly Val Glu Cys Arg
290 295 300

Phe Arg Arg Gly Pro Ala Met Ala Trp Glu Gly Glu Pro Met Arg His
305 310 315 320

Asn Leu Gly Gly Asn Leu Gly Asp Pro Arg Ala Arg Ala Val Ser Val
325 330 335

Pro Leu Gly Gly Arg Val Ala Arg Phe Leu Gln Cys Arg Phe Leu Phe
340 345 350

Ala Gly Pro Trp Leu Leu Phe Ser Glu Ile Ser Phe Ile Ser Asp Val
355 360 365

Val Asn Asn Ser Ser Pro Ala Leu Gly Gly Thr Phe Pro Pro Ala Pro
370 375 380

Trp Trp Pro Pro Gly Pro Pro Pro Thr Asn Phe Ser Ser Leu Glu Leu
385 390 395 400

Glu Pro Arg Gly Gln Gln Pro Val Ala Lys Ala Glu Gly Ser Pro Thr
405 410 415

Ala Ile Leu Ile Gly Cys Leu Val Ala Ile Ile Leu Leu Leu Leu Leu
420 425 430

Ile Ile Ala Leu Met Leu Trp Arg Leu His Trp Arg Arg Leu Leu Ser
435 440 445

Lys Ala Glu Arg Arg Val Leu Glu Glu Glu Leu Thr Val His Leu Ser
450 455 460

Val Pro Gly Asp Thr Ile Leu Ile Asn Asn Arg Pro Gly Pro Arg Glu
465 470 475 480

Pro Pro Pro Tyr Gln Glu Pro Arg Pro Arg Gly Asn Pro Pro His Ser
485 490 495

Ala Pro Cys Val Pro Asn Gly Ser Ala Leu Leu Leu Ser Asn Pro Ala
500 505 510

Tyr Arg Leu Leu Leu Ala Thr Tyr Ala Arg Pro Pro Arg Gly Pro Gly
515 520 525

Pro Pro Thr Pro Ala Trp Ala Lys Pro Thr Asn Thr Gln Ala Tyr Ser
530 535 540

Gly Asp Tyr Met Glu Pro Glu Lys Pro Gly Ala Pro Leu Leu Pro Pro
545 550 555 560

Pro Pro Gln Asn Ser Val Pro His Tyr Ala Glu Ala Asp Ile Val Thr
565 570 575

Leu Gln Gly Val Thr Gly Gly Asn Thr Tyr Ala Val Pro Ala Leu Pro
580 585 590

Pro Gly Ala Val Gly Asp Gly Pro Pro Arg Val Asp Phe Pro Arg Ser
595 600 605

Arg Leu Arg Phe Lys Glu Lys Leu Gly Glu Gly Gln Phe Gly Glu Val
610 615 620

His Leu Cys Glu Val Asp Ser Pro Gln Asp Leu Val Ser Leu Asp Phe
625 630 635 640

Pro Leu Asn Val Arg Lys Gly His Pro Leu Leu Val Ala Val Lys Ile
645 650 655

Leu Arg Pro Asp Ala Thr Lys Asn Ala Ser Phe Ser Leu Phe Ser Arg
660 665 670

Asn Asp Phe Leu Lys Glu Val Lys Ile Met Ser Arg Leu Lys Asp Pro
675 680 685

Asn Ile Ile Arg Leu Leu Gly Val Cys Val Gln Asp Asp Pro Leu Cys
690 695 700

Met Ile Thr Asp Tyr Met Glu Asn Gly Asp Leu Asn Gln Phe Leu Ser
705 710 715 720

Ala His Gln Leu Glu Asp Lys Ala Ala Glu Gly Ala Pro Gly Asp Gly
725 730 735

Gln Ala Ala Gln Gly Pro Thr Ile Ser Tyr Pro Met Leu Leu His Val
740 745 750

Ala Ala Gln Ile Ala Ser Gly Met Arg Tyr Leu Ala Thr Leu Asn Phe
755 760 765

Val His Arg Asp Leu Ala Thr Arg Asn Cys Leu Val Gly Glu Asn Phe
770 775 780

Thr Ile Lys Ile Ala Asp Phe Gly Met Ser Arg Asn Leu Tyr Ala Gly
785 790 795 800

Asp Tyr Tyr Arg Val Gln Gly Arg Ala Val Leu Pro Ile Arg Trp Met
805 810 815

Ala Trp Glu Cys Ile Leu Met Gly Lys Phe Thr Thr Ala Ser Asp Val
820 825 830

Trp Ala Phe Gly Val Thr Leu Trp Glu Val Leu Met Leu Cys Arg Ala

835				840				845							
Gln	Pro	Phe	Gly	Gln	Leu	Thr	Asp	Glu	Gln	Val	Ile	Glu	Asn	Ala	Gly
850						855				860					
Glu	Phe	Phe	Arg	Asp	Gln	Gly	Arg	Gln	Val	Tyr	Leu	Ser	Arg	Pro	Pro
865				870						875				880	
Ala	Cys	Pro	Gln	Gly	Leu	Tyr	Glu	Leu	Met	Leu	Arg	Cys	Trp	Ser	Arg
				885				890						895	
Glu	Ser	Glu	Gln	Arg	Pro	Pro	Phe	Ser	Gln	Leu	His	Arg	Phe	Leu	Ala
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Ser	Gly	Asp	Ala	Asp	Met	Lys	Gly	His	Phe	Asp	Pro	Ala	Lys	Cys	Arg
		20				25						30			
Tyr	Ala	Leu	Gly	Met	Gln	Asp	Arg	Thr	Ile	Pro	Asp	Ser	Asp	Ile	Ser
		35				40						45			
Ala	Ser	Ser	Ser	Trp	Ser	Asp	Ser	Thr	Ala	Ala	Arg	His	Ser	Arg	Leu
50						55				60					
Glu	Ser	Ser	Asp	Gly	Asp	Gly	Ala	Trp	Cys	Pro	Ala	Gly	Ser	Val	Phe
65				70						75				80	
Pro	Lys	Glu	Glu	Glu	Tyr	Leu	Gln	Val	Asp	Leu	Gln	Arg	Leu	His	Leu
				85				90						95	
Val	Ala	Leu	Val	Gly	Thr	Gln	Gly	Arg	His	Ala	Gly	Gly	Leu	Gly	Lys
		100				105						110			

Glu Phe Ser Arg Ser Tyr Arg Leu Arg Tyr Ser Arg Asp Gly Arg Arg
115 120 125

Trp Met Gly Trp Lys Asp Arg Trp Gly Gln Glu Val Ile Ser Gly Asn
130 135 140

Glu Asp Pro Glu Gly Val Val Leu Lys Asp Leu Gly Pro Pro Met Val
145 150 155 160

Ala Arg Leu Val Arg Phe Tyr Pro Arg Ala Asp Arg Val Met Ser Val
165 170 175

Cys Leu Arg Val Glu Leu Tyr Gly Cys Leu Trp Arg Asp Gly Leu Leu
180 185 190

Ser Tyr Thr Ala Pro Val Gly Gln Thr Met Tyr Leu Ser Glu Ala Val
195 200 205

Tyr Leu Asn Asp Ser Thr Tyr Asp Gly His Thr Val Gly Gly Leu Gln
210 215 220

Tyr Gly Gly Leu Gly Gln Leu Ala Asp Gly Val Val Gly Leu Asp Asp
225 230 235 240

Phe Arg Lys Ser Gln Glu Leu Arg Val Trp Pro Gly Tyr Asp Tyr Val
245 250 255

Gly Trp Ser Asn His Ser Phe Ser Ser Gly Tyr Val Glu Met Glu Phe
260 265 270

Glu Phe Asp Arg Leu Arg Ala Phe Gln Ala Met Gln Val His Cys Asn
275 280 285

Asn Met His Thr Leu Gly Ala Arg Leu Pro Gly Gly Val Glu Cys Arg
290 295 300

Phe Arg Arg Gly Pro Ala Met Ala Trp Glu Gly Glu Pro Met Arg His
305 310 315 320

Asn Leu Gly Gly Asn Leu Gly Asp Pro Arg Ala Arg Ala Val Ser Val
325 330 335

Pro Leu Gly Gly Arg Val Ala Arg Phe Leu Gln Cys Arg Phe Leu Phe
340 345 350

Ala Gly Pro Trp Leu Leu Phe Ser Glu Ile Ser Phe Ile Ser Asp Val
355 360 365

Val Asn Asn Ser Ser Pro Ala Leu Gly Gly Thr Phe Pro Pro Ala Pro
370 375 380

Trp Trp Pro Pro Gly Pro Pro Pro Thr Asn Phe Ser Ser Leu Glu Leu
385 390 395 400

Glu Pro Arg Gly Gln Gln Pro Val Ala Lys Ala Glu Gly Ser Pro Thr
405 410 415

Ala Ile Leu Ile Gly Cys Leu Val Ala Ile Ile Leu Leu Leu Leu Leu
420 425 430

Ile Ile Ala Leu Met Leu Trp Arg Leu His Trp Arg Arg Leu Leu Ser
435 440 445

Lys Ala Glu Arg Arg Val Leu Glu Glu Glu Leu Thr Val His Leu Ser
450 455 460

Val Pro Gly Asp Thr Ile Leu Ile Asn Asn Arg Pro Gly Pro Arg Glu
465 470 475 480

Pro Pro Pro Tyr Gln Glu Pro Arg Pro Arg Gly Asn Pro Pro His Ser
485 490 495

Ala Pro Cys Val Pro Asn Gly Ser Ala Leu Leu Leu Ser Asn Pro Ala
500 505 510

Tyr Arg Leu Leu Leu Ala Thr Tyr Ala Arg Pro Pro Arg Gly Pro Gly
515 520 525

Pro Pro Thr Pro Ala Trp Ala Lys Pro Thr Asn Thr Gln Ala Tyr Ser
530 535 540

Gly Asp Tyr Met Glu Pro Glu Lys Pro Gly Ala Pro Leu Leu Pro Pro
545 550 555 560

Pro Pro Gln Asn Ser Val Pro His Tyr Ala Glu Ala Asp Ile Val Thr

				565				570				575				
Leu	Gln	Gly	Val	Thr	Gly	Gly	Asn	Thr	Tyr	Ala	Val	Pro	Ala	Leu	Pro	
			580				585						590			
Pro	Gly	Ala	Val	Gly	Asp	Gly	Pro	Pro	Arg	Val	Asp	Phe	Pro	Arg	Ser	
			595				600						605			
Arg	Leu	Arg	Phe	Lys	Glu	Lys	Leu	Gly	Glu	Gly	Gln	Phe	Gly	Glu	Val	
			610				615						620			
His	Leu	Cys	Glu	Val	Asp	Ser	Pro	Gln	Asp	Leu	Val	Ser	Leu	Asp	Phe	
625						630									640	
Pro	Leu	Asn	Val	Arg	Lys	Gly	His	Pro	Leu	Leu	Val	Ala	Val	Lys	Ile	
						645									655	
Leu	Arg	Pro	Asp	Ala	Thr	Lys	Asn	Ala	Arg	Asn	Asp	Phe	Leu	Lys	Glu	
						660									670	
Val	Lys	Ile	Met	Ser	Arg	Leu	Lys	Asp	Pro	Asn	Ile	Ile	Arg	Leu	Leu	
						675									685	
Gly	Val	Cys	Val	Gln	Asp	Asp	Pro	Leu	Cys	Met	Ile	Thr	Asp	Tyr	Met	
						690									700	
Glu	Asn	Gly	Asp	Leu	Asn	Gln	Phe	Leu	Ser	Ala	His	Gln	Leu	Glu	Asp	
705						710									720	
Lys	Ala	Ala	Glu	Gly	Ala	Pro	Gly	Asp	Gly	Gln	Ala	Ala	Gln	Gly	Pro	
						725									735	
Thr	Ile	Ser	Tyr	Pro	Met	Leu	Leu	His	Val	Ala	Ala	Gln	Ile	Ala	Ser	
						740									750	
Gly	Met	Arg	Tyr	Leu	Ala	Thr	Leu	Asn	Phe	Val	His	Arg	Asp	Leu	Ala	
						755									765	
Thr	Arg	Asn	Cys	Leu	Val	Gly	Glu	Asn	Phe	Thr	Ile	Lys	Ile	Ala	Asp	
						770									780	
Phe	Gly	Met	Ser	Arg	Asn	Leu	Tyr	Ala	Gly	Asp	Tyr	Tyr	Arg	Val	Gln	
785						790									800	

Gly Arg Ala Val Leu Pro Ile Arg Trp Met Ala Trp Glu Cys Ile Leu
805 810 815

Met Gly Lys Phe Thr Thr Ala Ser Asp Val Trp Ala Phe Gly Val Thr
820 825 830

Leu Trp Glu Val Leu Met Leu Cys Arg Ala Gln Pro Phe Gly Gln Leu
835 840 845

Thr Asp Glu Gln Val Ile Glu Asn Ala Gly Glu Phe Phe Arg Asp Gln
850 855 860

Gly Arg Gln Val Tyr Leu Ser Arg Pro Pro Ala Cys Pro Gln Gly Leu
865 870 875 880

Tyr Glu Leu Met Leu Arg Cys Trp Ser Arg Glu Ser Glu Gln Arg Pro
885 890 895

Pro Phe Ser Gln Leu His Arg Phe Leu Ala Glu Asp Ala Leu Asn Thr
900 905 910

Val

<210> 4
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<212> PRT
<213> Mus musculus

<400> 4

Met Gly Thr Gly Thr Leu Ser Ser Leu Leu Leu Leu Leu Leu Val
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Thr Ile Gly Asp Ala Asp Met Lys Gly His Phe Asp Pro Ala Lys Cys
20 25 30

Arg Tyr Ala Leu Gly Met Gln Asp Arg Thr Ile Pro Asp Ser Asp Ile
35 40 45

Ser Val Ser Ser Ser Trp Ser Asp Ser Thr Ala Ala Arg His Ser Arg
50 55 60

Leu Glu Ser Ser Asp Gly Asp Gly Ala Trp Cys Pro Ala Gly Pro Val
65 70 75 80

Phe Pro Lys Glu Glu Glu Tyr Leu Gln Val Asp Leu Arg Arg Leu His
85 90 95

Leu Val Ala Leu Val Gly Thr Gln Gly Arg His Ala Gly Gly Leu Gly
100 105 110

Lys Glu Phe Ser Arg Ser Tyr Arg Leu Arg Tyr Ser Arg Asp Gly Arg
115 120 125

Arg Trp Met Asp Trp Lys Asp Arg Trp Gly Gln Glu Val Ile Ser Gly
130 135 140

Asn Glu Asp Pro Gly Gly Val Val Leu Lys Asp Leu Gly Pro Pro Met
145 150 155 160

Val Ala Arg Leu Val Arg Phe Tyr Pro Arg Ala Asp Arg Val Met Ser
165 170 175

Val Cys Leu Arg Val Glu Leu Tyr Gly Cys Leu Trp Arg Asp Gly Leu
180 185 190

Leu Ser Tyr Thr Ala Pro Val Gly Gln Thr Met Gln Leu Ser Glu Val
195 200 205

Met Val His Leu Asn Asp Ser Thr Tyr Asp Gly Tyr Thr Ala Gly Gly
210 215 220

Leu Gln Tyr Gly Gly Leu Gly Gln Leu Ala Asp Gly Val Val Gly Leu
225 230 235 240

Asp Asp Phe Arg Gln Ser Gln Glu Leu Arg Val Trp Pro Gly Tyr Asp
245 250 255

Tyr Val Gly Trp Ser Asn Gln Ser Phe Pro Thr Gly Tyr Val Glu Met
260 265 270

Glu Phe Glu Phe Asp Arg Leu Arg Thr Phe Gln Thr Met Gln Val His
275 280 285

Cys Asn Asn Met His Thr Leu Gly Ala Arg Leu Pro Gly Gly Val Glu

290		295		300											
Cys 305	Arg	Phe	Lys	Arg	Gly 310	Pro	Ala	Met	Ala	Trp 315	Glu	Gly	Glu	Pro	Val 320
Arg	His	Ala	Leu	Gly 325	Gly	Ser	Leu	Gly	Asp 330	Pro	Arg	Ala	Arg	Ala 335	Ile
Ser	Val	Pro	Leu	Gly 340	Gly	His	Val	Gly	Arg	Phe	Leu	Gln	Cys 350	Arg	Phe
Leu	Phe	Ala	Gly	Pro	Trp	Leu	Leu	Phe	Ser	Glu	Ile	Ser 365	Phe	Ile	Ser
Asp	Val 370	Val	Asn	Asp	Ser	Ser	Asp	Thr	Phe	Pro	Pro	Ala	Pro	Trp	Trp
Pro 385	Pro	Gly	Pro	Pro	Pro	Thr	Asn	Phe	Ser	Ser	Leu	Glu	Leu	Glu	Pro 400
Arg	Gly	Gln	Gln	Pro 405	Val	Ala	Lys	Ala	Glu	Gly	Ser	Pro	Thr	Ala 415	Ile
Leu	Ile	Gly	Cys 420	Leu	Val	Ala	Ile	Ile	Leu	Leu	Leu	Leu	Leu	Ile 430	Ile
Ala	Leu	Met	Leu	Trp	Arg	Leu	His	Trp	Arg	Arg	Leu	Leu	Ser	Lys	Ala
Glu	Arg	Arg	Val	Leu	Glu	Glu	Glu	Leu	Thr	Val	His	Leu	Ser	Val	Pro
Gly 465	Asp	Thr	Ile	Leu	Ile	Asn	Asn	Arg	Pro	Gly 475	Pro	Arg	Glu	Pro	Pro 480
Pro	Tyr	Gln	Glu	Pro	Arg	Pro	Arg	Gly	Thr	Pro	Pro	His	Ser	Ala	Pro
Cys	Val	Pro	Asn 500	Gly	Ser	Ala	Leu	Leu	Leu	Ser	Asn	Pro	Ala	Tyr	Arg
Leu	Leu	Leu	Ala	Thr	Tyr	Ala	Arg	Pro	Pro	Arg	Gly	Pro	Gly	Pro	Pro
			515				520					525			

Thr Pro Ala Trp Ala Lys Pro Thr Asn Thr Gln Ala Cys Ser Gly Asp
530 535 540

Tyr Met Glu Pro Glu Lys Pro Gly Ala Pro Leu Leu Pro Pro Pro Pro
545 550 555 560

Gln Asn Ser Val Pro His Tyr Ala Glu Ala Asp Ile Val Thr Leu Gln
565 570 575

Gly Val Thr Gly Gly Asn Thr Tyr Ala Val Pro Ala Leu Pro Pro Gly
580 585 590

Ala Val Gly Asp Gly Pro Pro Arg Val Asp Phe Pro Arg Ser Arg Leu
595 600 605

Arg Phe Lys Glu Lys Leu Gly Glu Gly Gln Phe Gly Glu Val His Leu
610 615 620

Cys Glu Val Glu Asp Pro Gln Asp Leu Val Ser Ser Asp Phe Pro Ile
625 630 635 640

Ser Val His Lys Gly His Pro Leu Leu Val Ala Val Lys Ile Leu Arg
645 650 655

Pro Asp Ala Thr Lys Asn Ala Arg Asn Asp Phe Leu Lys Glu Val Lys
660 665 670

Ile Met Ser Arg Leu Lys Asp Pro Asn Ile Ile Arg Leu Leu Gly Val
675 680 685

Cys Val Gln Asp Asp Pro Leu Cys Met Ile Thr Asp Tyr Met Glu Asn
690 695 700

Gly Asp Leu Asn Gln Phe Leu Ser Ala Arg Gln Leu Glu Asn Lys Ala
705 710 715 720

Thr Gln Gly Leu Ser Gly Asp Thr Glu Ser Asp Gln Gly Pro Thr Ile
725 730 735

Ser Tyr Pro Met Leu Leu His Val Gly Ala Gln Ile Ala Ser Gly Met
740 745 750

Arg Tyr Leu Ala Thr Leu Asn Phe Val His Arg Asp Leu Ala Thr Arg
755 760 765

Asn Cys Leu Val Gly Glu Asn Phe Thr Ile Lys Ile Ala Asp Phe Gly
770 775 780

Met Ser Arg Asn Leu Tyr Ala Gly Asp Tyr Tyr Arg Val Gln Gly Arg
785 790 795 800

Ala Val Leu Pro Ile Arg Trp Met Ala Trp Glu Cys Ile Leu Met Gly
805 810 815

Lys Phe Thr Thr Ala Ser Asp Val Trp Ala Phe Gly Val Thr Leu Trp
820 825 830

Glu Val Leu Met Leu Cys Arg Ser Gln Pro Phe Gly Gln Leu Thr Asp
835 840 845

Glu Gln Val Ile Glu Asn Ala Gly Glu Phe Phe Arg Asp Gln Gly Arg
850 855 860

Gln Val Tyr Leu Ser Arg Pro Pro Ala Cys Pro Gln Thr Leu Tyr Glu
865 870 875 880

Leu Met Leu Arg Cys Trp Ser Arg Glu Pro Glu Gln Arg Pro Pro Phe
885 890 895

Ala Gln Leu His Arg Phe Leu Ala Asp Asp Ala Leu Asn Thr Val
900 905 910

<210> 5
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<212> PRT
<213> Mus musculus

<400> 5

Met Gly Thr Gly Thr Leu Ser Ser Leu Leu Leu Leu Leu Leu Val
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Thr Ile Gly Asp Ala Asp Met Lys Gly His Phe Asp Pro Ala Lys Cys
20 25 30

Arg Tyr Ala Leu Gly Met Gln Asp Arg Thr Ile Pro Asp Ser Asp Ile

35					40					45					
Ser	Val	Ser	Ser	Ser	Trp	Ser	Asp	Ser	Thr	Ala	Ala	Arg	His	Ser	Arg
50						55				60					
Leu	Glu	Ser	Ser	Asp	Gly	Asp	Gly	Ala	Trp	Cys	Pro	Ala	Gly	Pro	Val
65					70					75					80
Phe	Pro	Lys	Glu	Glu	Glu	Tyr	Leu	Gln	Val	Asp	Leu	Arg	Arg	Leu	His
				85					90					95	
Leu	Val	Ala	Leu	Val	Gly	Thr	Gln	Gly	Arg	His	Ala	Gly	Gly	Leu	Gly
			100					105					110		
Lys	Glu	Phe	Ser	Arg	Ser	Tyr	Arg	Leu	Arg	Tyr	Ser	Arg	Asp	Gly	Arg
		115					120					125			
Arg	Trp	Met	Asp	Trp	Lys	Asp	Arg	Trp	Gly	Gln	Glu	Val	Ile	Ser	Gly
	130					135					140				
Asn	Glu	Asp	Pro	Gly	Gly	Val	Val	Leu	Lys	Asp	Leu	Gly	Pro	Pro	Met
145					150					155					160
Val	Ala	Arg	Leu	Val	Arg	Phe	Tyr	Pro	Arg	Ala	Asp	Arg	Val	Met	Ser
				165					170					175	
Val	Cys	Leu	Arg	Val	Glu	Leu	Tyr	Gly	Cys	Leu	Trp	Arg	Asp	Gly	Leu
			180					185					190		
Leu	Ser	Tyr	Thr	Ala	Pro	Val	Gly	Gln	Thr	Met	Gln	Leu	Ser	Glu	Val
		195					200					205			
Met	Val	His	Leu	Asn	Asp	Ser	Thr	Tyr	Asp	Gly	Tyr	Thr	Ala	Gly	Gly
	210					215					220				
Leu	Gln	Tyr	Gly	Gly	Leu	Gly	Gln	Leu	Ala	Asp	Gly	Val	Val	Gly	Leu
225					230					235					240
Asp	Asp	Phe	Arg	Gln	Ser	Gln	Glu	Leu	Arg	Val	Trp	Pro	Gly	Tyr	Asp
				245					250					255	
Tyr	Val	Gly	Trp	Ser	Asn	Gln	Ser	Phe	Pro	Thr	Gly	Tyr	Val	Glu	Met
			260					265					270		

Glu Phe Glu Phe Asp Arg Leu Arg Thr Phe Gln Thr Met Gln Val His
275 280 285

Cys Asn Asn Met His Thr Leu Gly Ala Arg Leu Pro Gly Gly Val Glu
290 295 300

Cys Arg Phe Lys Arg Gly Pro Ala Met Ala Trp Glu Gly Glu Pro Val
305 310 315 320

Arg His Ala Leu Gly Gly Ser Leu Gly Asp Pro Arg Ala Arg Ala Ile
325 330 335

Ser Val Pro Leu Gly Gly His Val Gly Arg Phe Leu Gln Cys Arg Phe
340 345 350

Leu Phe Ala Gly Pro Trp Leu Leu Phe Ser Glu Ile Ser Phe Ile Ser
355 360 365

Asp Val Val Asn Asp Ser Ser Asp Thr Phe Pro Pro Ala Pro Trp Trp
370 375 380

Pro Pro Gly Pro Pro Pro Thr Asn Phe Ser Ser Leu Glu Leu Glu Pro
385 390 395 400

Arg Gly Gln Gln Pro Val Ala Lys Ala Glu Gly Ser Pro Thr Ala Ile
405 410 415

Leu Ile Gly Cys Leu Val Ala Ile Ile Leu Leu Leu Leu Leu Ile Ile
420 425 430

Ala Leu Met Leu Trp Arg Leu His Trp Arg Arg Leu Leu Ser Lys Ala
435 440 445

Glu Arg Arg Val Leu Glu Glu Glu Leu Thr Val His Leu Ser Val Pro
450 455 460

Gly Asp Thr Ile Leu Ile Asn Asn Arg Pro Gly Pro Arg Glu Pro Pro
465 470 475 480

Pro Tyr Gln Glu Pro Arg Pro Arg Gly Thr Pro Pro His Ser Ala Pro
485 490 495

Cys Val Pro Asn Gly Ser Ala Cys Ser Gly Asp Tyr Met Glu Pro Glu
500 505 510

Lys Pro Gly Ala Pro Leu Leu Pro Pro Pro Pro Gln Asn Ser Val Pro
515 520 525

His Tyr Ala Glu Ala Asp Ile Val Thr Leu Gln Gly Val Thr Gly Gly
530 535 540

Asn Thr Tyr Ala Val Pro Ala Leu Pro Pro Gly Ala Val Gly Asp Gly
545 550 555 560

Pro Pro Arg Val Asp Phe Pro Arg Ser Arg Leu Arg Phe Lys Glu Lys
565 570 575

Leu Gly Glu Gly Gln Phe Gly Glu Val His Leu Cys Glu Val Glu Asp
580 585 590

Pro Gln Asp Leu Val Ser Ser Asp Phe Pro Ile Ser Val His Lys Gly
595 600 605

His Pro Leu Leu Val Ala Val Lys Ile Leu Arg Pro Asp Ala Thr Lys
610 615 620

Asn Ala Arg Asn Asp Phe Leu Lys Glu Val Lys Ile Met Ser Arg Leu
625 630 635 640

Lys Asp Pro Asn Ile Ile Arg Leu Leu Gly Val Cys Val Gln Asp Asp
645 650 655

Pro Leu Cys Met Ile Thr Asp Tyr Met Glu Asn Gly Asp Leu Asn Gln
660 665 670

Phe Leu Ser Ala Arg Gln Leu Glu Asn Lys Ala Thr Gln Gly Leu Ser
675 680 685

Gly Asp Thr Glu Ser Asp Gln Gly Pro Thr Ile Ser Tyr Pro Met Leu
690 695 700

Leu His Val Gly Ala Gln Ile Ala Ser Gly Met Arg Tyr Leu Ala Thr
705 710 715 720

Leu Asn Phe Val His Arg Asp Leu Ala Thr Arg Asn Cys Leu Val Gly
725 730 735

Glu Asn Phe Thr Ile Lys Ile Ala Asp Phe Gly Met Ser Arg Asn Leu
740 745 750

Tyr Ala Gly Asp Tyr Tyr Arg Val Gln Gly Arg Ala Val Leu Pro Ile
755 760 765

Arg Trp Met Ala Trp Glu Cys Ile Leu Met Gly Lys Phe Thr Thr Ala
770 775 780

Ser Asp Val Trp Ala Phe Gly Val Thr Leu Trp Glu Val Leu Met Leu
785 790 795 800

Cys Arg Ser Gln Pro Phe Gly Gln Leu Thr Asp Glu Gln Val Ile Glu
805 810 815

Asn Ala Gly Glu Phe Phe Arg Asp Gln Gly Arg Gln Val Tyr Leu Ser
820 825 830

Arg Pro Pro Ala Cys Pro Gln Thr Leu Tyr Glu Leu Met Leu Arg Cys
835 840 845

Trp Ser Arg Glu Pro Glu Gln Arg Pro Pro Phe Ala Gln Leu His Arg
850 855 860

Phe Leu Ala Asp Asp Ala Leu Asn Thr Val
865 870