

SEQUENCE LISTING

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 <170> PatentIn version 3.1

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

gcc aag ggc gag gag gtg gac gtc gcc cgc gcg gaa cgg cag cac cag      144
Ala Lys Gly Glu Glu Val Asp Val Ala Arg Ala Glu Arg Gln His Gln
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Leu Tyr Val Gly Val Leu Gly Ser Lys Leu Gly Leu Gln Val Val Glu

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Ala Lys Gly Glu Glu Val Asp Val Ala Arg Ala Glu Arg Gln His Gln
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Ser Arg Arg Lys Glu Val Asp Met Met Lys Glu Ala Leu Glu Lys Leu
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Gln Leu Asn Ile Val Glu Met Lys Asp Glu Asn Ala Thr Leu Asp Gly
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Gly Asp Val Leu Phe Thr Gly Arg Glu Phe Phe Val Gly Leu Ser Lys
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Arg Thr Asn Gln Arg Gly Ala Glu Ile Leu Ala Asp Thr Phe Lys Asp
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Tyr Ala Val Ser Thr Val Pro Val Ala Asp Gly Leu His Leu Lys Ser
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Phe Cys Ser Met Ala Gly Pro Asn Leu Ile Ala Ile Gly Ser Ser Glu
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Ser Ala Gln Lys Ala Leu Lys Ile Met Gln Gln Met Ser Asp His Arg
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Tyr Asp Lys Leu Thr Val Pro Asp Asp Ile Ala Ala Asn Cys Ile Tyr
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Leu Asn Ile Pro Asn Lys Gly His Val Leu Leu His Arg Thr Pro Glu
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 115 120 125

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Phe Cys Ser Met	Ala Gly Pro Asn Leu Ile Ala Ile	Gly Ser Ser Glu		
	180	185	190	
tct gca cag aag	gcc ctt aag atc atg caa cag atg	agt gac cac cgc	624	
Ser Ala Gln Lys	Ala Leu Lys Ile Met Gln Gln Met	Ser Asp His Arg		
	195	200	205	
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ctg atc ccc gtg	agc atg tct gaa ctg gaa aag gtg	gat ggg ctg ctc	816	
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	260	265	270	
acc tgc tgc tca	gtt tta att aac aag aaa gta gac	tcc tga	858	
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gtc Val	tcc Ser	act Thr	gtg Val	cca Pro 165	gtc Val	tcg Ser	ggg Gly	ccc Pro	tcc Ser	cac His	ctg Leu	cgc Arg	ggg Gly 175	ctc Leu	tgc Cys	528
170																
ggc Gly	atg Met	ggg Gly	gga Gly	cct Pro	cgc Arg	act Thr	gtt Val	gtg Val	gca Ala	ggc Gly	agc Ser	agc Ser	gac Asp 190	gct Ala	gcc Ala	576
180								185								
caa Gln	aag Lys	gct Ala	gtc Val	cgg Arg	gca Ala	atg Met	gca Ala	gtg Val	ctg Leu	aca Thr	gat Asp	cac His	cca Pro	tat Tyr	gcc Ala	624
		195						200					205			
tcc Ser	ctg Leu	acc Thr	ctc Leu	cca Pro	gat Asp	gac Asp	gca Ala	gct Ala	gct Ala	gac Asp	tgc Cys	ctc Leu	ttt Phe	ctt Leu	cgt Arg	672
210						215					220					
cct Pro	ggg Gly	ttg Leu	cct Pro	ggg Gly	gtg Val	ccc Pro	cct Pro	ttc Phe	ctc Leu	ctg Leu	cac His	cgt Arg	gga Gly	ggg Gly	ggg Gly	720
225					230					235						240

gat ctg ccc aac agc cag gag gca ctg cag aag ctc tct gat gtc acc 768
 Asp Leu Pro Asn Ser Gln Glu Ala Leu Gln Lys Leu Ser Asp Val Thr
 245 250 255

ctg gta cct gtg tcc tgc tca gaa ctg gag aag gct ggc gcc ggg ctc 816
 Leu Val Pro Val Ser Cys Ser Glu Leu Glu Lys Ala Gly Ala Gly Leu
 260 265 270

agc tcc ctc tgc ttg gtg ctc agc aca cgc ccc cac agc tga 858
 Ser Ser Leu Cys Leu Val Leu Ser Thr Arg Pro His Ser
 275 280 285

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Met Gly Thr Pro Gly Glu Gly Leu Gly Arg Cys Ser His Ala Leu Ile
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Arg Gly Val Pro Glu Ser Leu Ala Ser Gly Glu Gly Ala Gly Ala Gly
 20 25 30

Leu Pro Ala Leu Asp Leu Ala Lys Ala Gln Arg Glu His Gly Val Leu
 35 40 45

Gly Gly Lys Leu Arg Gln Arg Leu Gly Leu Gln Leu Leu Glu Leu Pro
 50 55 60

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

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

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

Arg Ile Val Glu Ile Gly Asp Glu Asn Ala Thr Leu Asp Gly Thr Asp
 115 120 125

Val Leu Phe Thr Gly Arg Glu Phe Phe Val Gly Leu Ser Lys Trp Thr
 130 135 140

Asn His Arg Gly Ala Glu Ile Val Ala Asp Thr Phe Arg Asp Phe Ala
 145 150 155 160

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

Gly Met Gly Gly Pro Arg Thr Val Val Ala Gly Ser Ser Asp Ala Ala
180 185 190

Gln Lys Ala Val Arg Ala Met Ala Val Leu Thr Asp His Pro Tyr Ala
195 200 205

Ser Leu Thr Leu Pro Asp Asp Ala Ala Ala Asp Cys Leu Phe Leu Arg
210 215 220

Pro Gly Leu Pro Gly Val Pro Pro Phe Leu Leu His Arg Gly Gly Gly
225 230 235 240

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

Leu Val Pro Val Ser Cys Ser Glu Leu Glu Lys Ala Gly Ala Gly Leu
260 265 270

Ser Ser Leu Cys Leu Val Leu Ser Thr Arg Pro His Ser
275 280 285

<210> 35

<211> 858

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (1)..(858)

<223>

<400> 35

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Met Gly Thr Pro Gly Glu Gly Leu Gly Arg Cys Ser His Ala Leu Ile
1 5 10 15

cgg gga gtc cca gag agc ctg gcg tcg ggg gaa ggt gcg ggg gct ggc 96
Arg Gly Val Pro Glu Ser Leu Ala Ser Gly Glu Gly Ala Gly Ala Gly
20 25 30

ctt ccc gct ctg gat ctg gcc aaa gct caa agg gag cac ggg gtg ctg 144
Leu Pro Ala Leu Asp Leu Ala Lys Ala Gln Arg Glu His Gly Val Leu
35 40 45

gga ggt aaa ctg agg caa cga ctg ggg cta cag ctg cta gaa ctg cca 192
Gly Gly Lys Leu Arg Gln Arg Leu Gly Leu Gln Leu Leu Glu Leu Pro
50 55 60

cct gag gag tca ttg ccg ctg gga ccg ctg ctt ggc gac acg gcc gtg 240
Pro Glu Glu Ser Leu Pro Leu Gly Pro Leu Leu Gly Asp Thr Ala Val
65 70 75 80

atc caa ggg gac acg gcc cta atc acg cgg ccc tgg agc ccc gct cgt 288
Ile Gln Gly Asp Thr Ala Leu Ile Thr Arg Pro Trp Ser Pro Ala Arg
85 90 95

agg cca gag gtc gat gga gtc cgc aaa gcc ctg caa gac ctg ggg ctc	336
Arg Pro Glu Val Asp Gly Val Arg Lys Ala Leu Gln Asp Leu Gly Leu	
100 105 110	
cga att gtg gaa ata gga gac gag aac gcg acg ctg gat ggc act gac	384
Arg Ile Val Glu Ile Gly Asp Glu Asn Ala Thr Leu Asp Gly Thr Asp	
115 120 125	
gtt ctc ttc acc ggc cgg gag ttt ttc gta ggc ctc tcc aaa tgg acc	432
Val Leu Phe Thr Gly Arg Glu Phe Phe Val Gly Leu Ser Lys Trp Thr	
130 135 140	
aat cac cga gga gct gag atc gtg gcg gac acg ttc cgg gac ttc gcc	480
Asn His Arg Gly Ala Glu Ile Val Ala Asp Thr Phe Arg Asp Phe Ala	
145 150 155 160	
gtc tcc act gtg cca gtc tcg ggt ccc tcc cac ctg cgc ggt ctc tgc	528
Val Ser Thr Val Pro Val Ser Gly Pro Ser His Leu Arg Gly Leu Cys	
165 170 175	
ggc atg ggg gga cct cgc act gtt gtg gca ggc agc agc gac gct gcc	576
Gly Met Gly Gly Pro Arg Thr Val Val Ala Gly Ser Ser Asp Ala Ala	
180 185 190	
caa aag gct gtc cgg gca atg gca gtg ctg aca gat cac cca tat gcc	624
Gln Lys Ala Val Arg Ala Met Ala Val Leu Thr Asp His Pro Tyr Ala	
195 200 205	
tcc ctg acc ctc cca gat gac gca gct gct gac tgc ctc ttt ctt cgt	672
Ser Leu Thr Leu Pro Asp Asp Ala Ala Ala Asp Cys Leu Phe Leu Arg	
210 215 220	
cct ggg ttg cct ggt gtg cct cct ttc ctc ctg cac cgt gga ggt ggg	720
Pro Gly Leu Pro Gly Val Pro Pro Phe Leu Leu His Arg Gly Gly Gly	
225 230 235 240	
gat ctg ccc aac agc cag gag gca ctg cag aag ctc tct gat gtc acc	768
Asp Leu Pro Asn Ser Gln Glu Ala Leu Gln Lys Leu Ser Asp Val Thr	
245 250 255	
ctg gta cct gtg tcc tgc tca gaa ctg gag aag gct ggc gcc ggg ctc	816
Leu Val Pro Val Ser Cys Ser Glu Leu Glu Lys Ala Gly Ala Gly Leu	
260 265 270	
agc tcc ctc tgc ttg gtg ctc agc aca cgc ccc cac agc tga	858
Ser Ser Leu Cys Leu Val Leu Ser Thr Arg Pro His Ser	
275 280 285	
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Arg Gly Val Pro Glu Ser Leu Ala Ser Gly Glu Gly Ala Gly Ala Gly	
20 25 30	

Leu Pro Ala Leu Asp Leu Ala Lys Ala Gln Arg Glu His Gly Val Leu
 35 40 45

Gly Gly Lys Leu Arg Gln Arg Leu Gly Leu Gln Leu Leu Glu Leu Pro
 50 55 60

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

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

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

Arg Ile Val Glu Ile Gly Asp Glu Asn Ala Thr Leu Asp Gly Thr Asp
 115 120 125

Val Leu Phe Thr Gly Arg Glu Phe Phe Val Gly Leu Ser Lys Trp Thr
 130 135 140

Asn His Arg Gly Ala Glu Ile Val Ala Asp Thr Phe Arg Asp Phe Ala
 145 150 155 160

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

Gly Met Gly Gly Pro Arg Thr Val Val Ala Gly Ser Ser Asp Ala Ala
 180 185 190

Gln Lys Ala Val Arg Ala Met Ala Val Leu Thr Asp His Pro Tyr Ala
 195 200 205

Ser Leu Thr Leu Pro Asp Asp Ala Ala Ala Asp Cys Leu Phe Leu Arg
 210 215 220

Pro Gly Leu Pro Gly Val Pro Pro Phe Leu Leu His Arg Gly Gly Gly
 225 230 235 240

Asp Leu Pro Asn Ser Gln Glu Ala Leu Gln Lys Leu Ser Asp Val Thr
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Leu Val Pro Val Ser Cys Ser Glu Leu Glu Lys Ala Gly Ala Gly Leu
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Ser Ser Leu Cys Leu Val Leu Ser Thr Arg Pro His Ser
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<210> 37
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 Met Ala Gly Leu Gly His Pro Ala Ala Phe Gly Arg Ala Thr His Ala
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 Val Val Arg Ala Leu Pro Glu Ser Leu Gly Gln His Ala Leu Arg Ser
 20 25 30

gcc aag ggc gag gag gtg gac gtc gcc cgc gcg gaa cgg cag cac cag 144
 Ala Lys Gly Glu Glu Val Asp Val Ala Arg Ala Glu Arg Gln His Gln
 35 40 45

ctc tac gtg ggc gtg ctg ggc agc aag ctg ggg ctg cag gtg gtg gag 192
 Leu Tyr Val Gly Val Leu Gly Ser Lys Leu Gly Leu Gln Val Val Glu
 50 55 60

ctg ccg gcc gac gag agc ctt ccg gac tgc gtc ttc gtg gag gac gtg 240
 Leu Pro Ala Asp Glu Ser Leu Pro Asp Cys Val Phe Val Glu Asp Val
 65 70 75 80

gcc gtg gtg tgc gag gag acg gcc ctc atc acc cga ccc ggg gcg ccg 288
 Ala Val Val Cys Glu Glu Thr Ala Leu Ile Thr Arg Pro Gly Ala Pro
 85 90 95

agc cgg agg aag gag gtt gac atg atg aaa gaa gca tta gaa aaa ctt 336
 Ser Arg Arg Lys Glu Val Asp Met Met Lys Glu Ala Leu Glu Lys Leu
 100 105 110

cag ctc aat ata gta gag atg aaa gat gaa aat gca act tta gat ggc 384
 Gln Leu Asn Ile Val Glu Met Lys Asp Glu Asn Ala Thr Leu Asp Gly
 115 120 125

gga gat gtt tta ttc aca ggc aga gaa ttt ttt gtg ggc ctt tcc aaa 432
 Gly Asp Val Leu Phe Thr Gly Arg Glu Phe Phe Val Gly Leu Ser Lys
 130 135 140

agg aca aat caa cga ggt gct gaa atc ttg gct gat act ttt aag gac 480
 Arg Thr Asn Gln Arg Gly Ala Glu Ile Leu Ala Asp Thr Phe Lys Asp
 145 150 155 160

tat gca gtc tcc aca gtg cca gtg gca gat ggg ttg cat ttg aag agt 528
 Tyr Ala Val Ser Thr Val Pro Val Ala Asp Gly Leu His Leu Lys Ser
 165 170 175

ttc tgc agc atg gct ggg cct aac ctg atc gcg att ggg tct agt gaa 576
 Phe Cys Ser Met Ala Gly Pro Asn Leu Ile Ala Ile Gly Ser Ser Glu

180	185	190	
tct gca cag aag gcc ctt aag	atc atg caa cag atg agt gac cac cgc	624	
Ser Ala Gln Lys Ala Leu Lys	Ile Met Gln Gln Met Ser Asp His Arg		
195	200	205	
tac gac aaa ctc act gtg cct gat gac ata gca gca aac tgt ata tat	672		
Tyr Asp Lys Leu Thr Val Pro Asp Asp Ile Ala Ala Asn Cys Ile Tyr			
210	215	220	
cta aat atc ccc aac aaa ggg cac gtc ttg ctg cac cga acc ccg gaa	720		
Leu Asn Ile Pro Asn Lys Gly His Val Leu Leu His Arg Thr Pro Glu			
225	230	235	
gag tat cca gaa agt gca aag gtt tat gag aaa ctg aag gac cat atg	768		
Glu Tyr Pro Glu Ser Ala Lys Val Tyr Glu Lys Leu Lys Asp His Met			
245	250	255	
ctg atc ccc gtg agc atg tct gaa ctg gaa aag gtg gat ggg ctg ctc	816		
Leu Ile Pro Val Ser Met Ser Glu Leu Glu Lys Val Asp Gly Leu Leu			
260	265	270	
acc tgc tgc tca gtt tta att aac aag aaa gta gac tcc tga	858		
Thr Cys Cys Ser Val Leu Ile Asn Lys Lys Val Asp Ser			
275	280	285	
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Val Val Arg Ala Leu Pro Glu Ser Leu Gly Gln His Ala Leu Arg Ser			
20	25	30	
Ala Lys Gly Glu Glu Val Asp Val Ala Arg Ala Glu Arg Gln His Gln			
35	40	45	
Leu Tyr Val Gly Val Leu Gly Ser Lys Leu Gly Leu Gln Val Val Glu			
50	55	60	
Leu Pro Ala Asp Glu Ser Leu Pro Asp Cys Val Phe Val Glu Asp Val			
65	70	75	
Ala Val Val Cys Glu Glu Thr Ala Leu Ile Thr Arg Pro Gly Ala Pro			
85	90	95	
Ser Arg Arg Lys Glu Val Asp Met Met Lys Glu Ala Leu Glu Lys Leu			
100	105	110	
Gln Leu Asn Ile Val Glu Met Lys Asp Glu Asn Ala Thr Leu Asp Gly			

115							120					125					
Gly	Asp	Val	Leu	Phe	Thr	Gly	Arg	Glu	Phe	Phe	Val	Gly	Leu	Ser	Lys		
130						135					140						
Arg	Thr	Asn	Gln	Arg	Gly	Ala	Glu	Ile	Leu	Ala	Asp	Thr	Phe	Lys	Asp		
145					150					155					160		
Tyr	Ala	Val	Ser	Thr	Val	Pro	Val	Ala	Asp	Gly	Leu	His	Leu	Lys	Ser		
				165					170					175			
Phe	Cys	Ser	Met	Ala	Gly	Pro	Asn	Leu	Ile	Ala	Ile	Gly	Ser	Ser	Glu		
			180					185					190				
Ser	Ala	Gln	Lys	Ala	Leu	Lys	Ile	Met	Gln	Gln	Met	Ser	Asp	His	Arg		
		195					200					205					
Tyr	Asp	Lys	Leu	Thr	Val	Pro	Asp	Asp	Ile	Ala	Ala	Asn	Cys	Ile	Tyr		
	210					215					220						
Leu	Asn	Ile	Pro	Asn	Lys	Gly	His	Val	Leu	Leu	His	Arg	Thr	Pro	Glu		
225					230					235					240		
Glu	Tyr	Pro	Glu	Ser	Ala	Lys	Val	Tyr	Glu	Lys	Leu	Lys	Asp	His	Met		
				245					250					255			
Leu	Ile	Pro	Val	Ser	Met	Ser	Glu	Leu	Glu	Lys	Val	Asp	Gly	Leu	Leu		
			260					265					270				
Thr	Cys	Cys	Ser	Val	Leu	Ile	Asn	Lys	Lys	Val	Asp	Ser					
		275					280					285					