

566978_1.txt
SEQUENCE LISTING

<110> Tryggvason, Karl
Sergey, Rodin

<120> Cell Culture Medium

<130> LCTI-200006W003

<160> 8

<170> PatentIn version 3.5

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<211> 3695

<212> PRT

<213> Homo sapiens

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

Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val Asn Val
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Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu Ile Lys
145 150 155 160

Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg Ser Met
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Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser Ser Lys
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 195 200 205
 Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile Val Pro
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 Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg Pro Gly
 225 230 235 240
 Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr Lys Ala
 245 250 255
 Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu Gly His
 260 265 270
 Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg Tyr Tyr
 275 280 285
 Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys His Gly
 290 295 300
 His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe Arg Leu
 305 310 315 320
 Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp Arg Cys
 325 330 335
 Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala Asn Ser
 340 345 350
 Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr Asp Cys
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 Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser Leu Asp
 370 375 380
 Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His His Thr
 385 390 395 400
 Thr Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg Ser Pro
 405 410 415
 Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn Cys Glu
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Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg Cys Tyr
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Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala Glu Gly
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Phe Thr Gly Phe Pro Ser Cys Tyr Pro Thr Pro Ser Ser Ser Asn Asp
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Gly Thr Leu Pro Glu Gly Cys Asp Glu Ala Gly Arg Cys Leu Cys Gln
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680

685

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 725 730 735

Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val Glu Gly
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Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser Pro Ser
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Trp Leu Val Phe Arg Tyr Val Asn Arg Gly Ala Met Ser Val Ser Gly
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Pro Cys Leu Tyr Ser Thr Leu Cys Arg Gly Thr Ala Arg Asp Thr
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 Glu Ala Thr Leu Gly His Ala Lys Thr Leu Leu Ala Ala Ile Arg
 2270 2275 2280
 Ala Val Asp Arg Thr Leu Ser Glu Leu Met Ser Gln Thr Gly His
 2285 2290 2295
 Leu Gly Leu Ala Asn Ala Ser Ala Pro Ser Gly Glu Gln Leu Leu
 2300 2305 2310
 Arg Thr Leu Ala Glu Val Glu Arg Leu Leu Trp Glu Met Arg Ala
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 Arg Asn Gln Glu Arg Leu Glu Glu Ala Leu Gln Arg Lys Gln Glu
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 Arg Asp Thr Leu Ala Ser Val Phe Arg Leu Leu His Ser Leu Asp
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 Gln Ala Lys Glu Glu Leu Glu Arg Leu Ala Ala Ser Leu Asp Gly
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 Ala Arg Thr Pro Leu Leu Gln Arg Met Gln Thr Phe Ser Pro Ala
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 Gly Ser Lys Leu Arg Leu Val Glu Ala Ala Glu Ala His Ala Gln
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 Gln Leu Gly Gln Leu Ala Leu Asn Leu Ser Ser Ile Ile Leu Asp
 2495 2500 2505
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2675						2680					2685	Glu
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2735						2740					2745	Leu
Thr	Pro	Arg	Asp	Leu	Ala	Asp	Leu	Ala	Ala	Tyr	Thr	Ala
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 Thr Phe Thr Pro Pro Pro Leu Leu Arg Phe Pro Gly Tyr Arg Gly
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 3050 3055 3060

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 3500 3505 3510
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 3515 3520 3525
 Gly Val Ile Thr Leu Asp Leu Pro Gly Ala Thr Leu Pro Asp Val
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3530

3535

Gly Leu Glu Leu Glu Val Arg Pro Leu Ala Val Thr Gly Leu Ile
3545 3550 3555

Phe His Leu Gly Gln Ala Arg Thr Pro Pro Tyr Leu Gln Leu Gln
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Val Thr Glu Lys Gln Val Leu Leu Arg Ala Asp Asp Gly Ala Gly
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Glu Phe Ser Thr Ser Val Thr Arg Pro Ser Val Leu Cys Asp Gly
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Gln Trp His Arg Leu Ala Val Met Lys Ser Gly Asn Val Leu Arg
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Leu Glu Val Asp Ala Gln Ser Asn His Thr Val Gly Pro Leu Leu
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Ala Ala Ala Ala Gly Ala Pro Ala Pro Leu Tyr Leu Gly Gly Leu
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35

40

45

Pro Ala Thr Gly Asp Leu Leu Val Gly Arg Ala Asp Arg Leu Thr Ala
 50 55 60

Ser Ser Thr Cys Gly Leu Asn Gly Pro Gln Pro Tyr Cys Ile Val Ser
 65 70 75 80

His Leu Gln Asp Glu Lys Lys Cys Phe Leu Cys Asp Ser Arg Arg Pro
 85 90 95

Phe Ser Ala Arg Asp Asn Pro His Ser His Arg Ile Gln Asn Val Val
 100 105 110

Thr Ser Phe Ala Pro Gln Arg Arg Ala Ala Trp Trp Gln Ser Glu Asn
 115 120 125

Gly Ile Pro Ala Val Thr Ile Gln Leu Asp Leu Glu Ala Glu Phe His
 130 135 140

Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg Pro Ala Ala Met
 145 150 155 160

Leu Val Glu Arg Ser Ala Asp Phe Gly Arg Thr Trp His Val Tyr Arg
 165 170 175

Tyr Phe Ser Tyr Asp Cys Gly Ala Asp Phe Pro Gly Val Pro Leu Ala
 180 185 190

Pro Pro Arg His Trp Asp Asp Val Val Cys Glu Ser Arg Tyr Ser Glu
 195 200 205

Ile Glu Pro Ser Thr Glu Gly Glu Val Ile Tyr Arg Val Leu Asp Pro
 210 215 220

Ala Ile Pro Ile Pro Asp Pro Tyr Ser Ser Arg Ile Gln Asn Leu Leu
 225 230 235 240

Lys Ile Thr Asn Leu Arg Val Asn Leu Thr Arg Leu His Thr Leu Gly
 245 250 255

Asp Asn Leu Leu Asp Pro Arg Arg Glu Ile Arg Glu Lys Tyr Tyr Tyr
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Ala Leu Tyr Glu Leu Val Val Arg Gly Asn Cys Phe Cys Tyr Gly His
 275 280 285

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Ala Ser Glu Cys Ala Pro Ala Pro Gly Ala Pro Ala His Ala Glu Gly
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Met Val His Gly Ala Cys Ile Cys Lys His Asn Thr Arg Gly Leu Asn
 305 310 315 320

Cys Glu Gln Cys Gln Asp Phe Tyr Arg Asp Leu Pro Trp Arg Pro Ala
 325 330 335

Glu Asp Gly His Ser His Ala Cys Arg Lys Cys Glu Cys His Gly His
 340 345 350

Thr His Ser Cys His Phe Asp Met Ala Val Tyr Leu Ala Ser Gly Asn
 355 360 365

Val Ser Gly Gly Val Cys Asp Gly Cys Gln His Asn Thr Ala Gly Arg
 370 375 380

His Cys Glu Leu Cys Arg Pro Phe Phe Tyr Arg Asp Pro Thr Lys Asp
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Leu Arg Asp Pro Ala Val Cys Arg Ser Cys Asp Cys Asp Pro Met Gly
 405 410 415

Ser Gln Asp Gly Gly Arg Cys Asp Ser His Asp Asp Pro Ala Leu Gly
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Leu Val Ser Gly Gln Cys Arg Cys Lys Glu His Val Val Gly Thr Arg
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Cys Gln Gln Cys Arg Asp Gly Phe Phe Gly Leu Ser Ile Ser Asp Arg
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Leu Gly Cys Arg Arg Cys Gln Cys Asn Ala Arg Gly Thr Val Pro Gly
 465 470 475 480

Ser Thr Pro Cys Asp Pro Asn Ser Gly Ser Cys Tyr Cys Lys Arg Leu
 485 490 495

Val Thr Gly Arg Gly Cys Asp Arg Cys Leu Pro Gly His Trp Gly Leu
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Ser His Asp Leu Leu Gly Cys Arg Pro Cys Asp Cys Asp Val Gly Gly
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Ala Leu Asp Pro Gln Cys Asp Glu Gly Thr Gly Gln Cys His Cys Arg
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Gln His Met Val Gly Arg Arg Cys Glu Gln Val Gln Pro Gly Tyr Phe
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Ser Trp Thr Gly Ser Gly Phe Val Arg Leu Gln Glu Gly Gln Thr Leu
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Glu Phe Leu Val Ala Ser Val Pro Lys Ala Met Asp Tyr Asp Leu Leu
610 615 620

Leu Arg Leu Glu Pro Gln Val Pro Glu Gln Trp Ala Glu Leu Glu Leu
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Ile Val Gln Arg Pro Gly Pro Val Pro Ala His Ser Leu Cys Gly His
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Leu Val Pro Lys Asp Asp Arg Ile Gln Gly Thr Leu Gln Pro His Ala
660 665 670

Arg Tyr Leu Ile Phe Pro Asn Pro Val Cys Leu Glu Pro Gly Ile Ser
675 680 685

Tyr Lys Leu His Leu Lys Leu Val Arg Thr Gly Gly Ser Ala Gln Pro
690 695 700

Glu Thr Pro Tyr Ser Gly Pro Gly Leu Leu Ile Asp Ser Leu Val Leu
705 710 715 720

Leu Pro Arg Val Leu Val Leu Glu Met Phe Ser Gly Gly Asp Ala Ala
725 730 735

Ala Leu Glu Arg Gln Ala Thr Phe Glu Arg Tyr Gln Cys His Glu Glu
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Gly Leu Val Pro Ser Lys Thr Ser Pro Ser Glu Ala Cys Ala Pro Leu
755 760 765

Leu Ile Ser Leu Ser Thr Leu Ile Tyr Asn Gly Ala Leu Pro Cys Gln
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Cys Asn Pro Gln Gly Ser Leu Ser Ser Glu Cys Asn Pro His Gly Gly
785 790 795 800

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Gln Cys Leu Cys Lys Pro Gly Val Val Gly Arg Arg Cys Asp Leu Cys
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Ala Pro Gly Tyr Tyr Gly Phe Gly Pro Thr Gly Cys Gln Ala Cys Gln
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Cys Ser His Glu Gly Ala Leu Ser Ser Leu Cys Glu Lys Thr Ser Gly
835 840 845

Gln Cys Leu Cys Arg Thr Gly Ala Phe Gly Leu Arg Cys Asp Arg Cys
850 855 860

Gln Arg Gly Gln Trp Gly Phe Pro Ser Cys Arg Pro Cys Val Cys Asn
865 870 875 880

Gly His Ala Asp Glu Cys Asn Thr His Thr Gly Ala Cys Leu Gly Cys
885 890 895

Arg Asp His Thr Gly Gly Glu His Cys Glu Arg Cys Ile Ala Gly Phe
900 905 910

His Gly Asp Pro Arg Leu Pro Tyr Gly Gly Gln Cys Arg Pro Cys Pro
915 920 925

Cys Pro Glu Gly Pro Gly Ser Gln Arg His Phe Ala Thr Ser Cys His
930 935 940

Gln Asp Glu Tyr Ser Gln Gln Ile Val Cys His Cys Arg Ala Gly Tyr
945 950 955 960

Thr Gly Leu Arg Cys Glu Ala Cys Ala Pro Gly His Phe Gly Asp Pro
965 970 975

Ser Arg Pro Gly Gly Arg Cys Gln Leu Cys Glu Cys Ser Gly Asn Ile
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Asp Pro Met Asp Pro Asp Ala Cys Asp Pro His Thr Gly Gln Cys Leu
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Arg Cys Leu His His Thr Glu Gly Pro His Cys Ala His Cys Lys
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1070	1075	1080		
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1085	1090	1095		
Pro Ser Arg Ala Arg Gly	Pro Thr Cys Asn Glu Phe	Thr Gly Gln		
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Cys His Cys Arg Ala Gly	Phe Gly Gly Arg Thr Cys	Ser Glu Cys		
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Gln Glu Leu His Trp Gly	Asp Pro Gly Leu Gln Cys	His Ala Cys		
1130	1135	1140		
Asp Cys Asp Ser Arg Gly	Ile Asp Thr Pro Gln Cys	His Arg Phe		
1145	1150	1155		
Thr Gly His Cys Ser Cys	Arg Pro Gly Val Ser Gly	Val Arg Cys		
1160	1165	1170		
Asp Gln Cys Ala Arg Gly	Phe Ser Gly Ile Phe Pro	Ala Cys His		
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 1460 1465 1470
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 Arg Ser Trp Ala Glu Asp Glu Lys Gln Lys Ala Glu Thr Val Gln
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 Ser Ser Ala Gly Glu Arg Ala Arg Gln Leu Asp Ala Leu Leu Glu
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 1700 1705 1710
 Lys Ala Leu Ala Glu Arg Lys Ala Gln Gly Val Leu Ala Ala Gln
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 Ala Arg Ala Glu Gln Leu Arg Asp Glu Ala Arg Asp Leu Leu Gln
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 1745 1750 1755

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Tyr Glu Glu Asn Glu Arg Ala Leu Glu Ser Lys Ala Ala Gln Leu
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Asp Gly Leu Glu Ala Arg Met Arg Ser Val Leu Gln Ala Ile Asn
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1805 1810

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<212> PRT
<213> Homo sapiens

<400> 3

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Leu Trp Pro Val Leu Ala Val Leu Ala Ala Ala Ala Ala Ala Gly Cys
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Ala Gln Ala Ala Met Asp Glu Cys Thr Asp Glu Gly Gly Arg Pro Gln
35 40 45

Arg Cys Met Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val
50 55 60

Ala Thr Asn Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln Thr
65 70 75 80

Gly Val Thr Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly Gln
85 90 95

Pro His Leu Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn Gln
100 105 110

Ala Asp Thr Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val Gln
115 120 125

Tyr Pro Ser Ser Ile Asn Leu Thr Leu His Leu Gly Lys Ala Phe Asp
130 135 140

Ile Thr Tyr Val Arg Leu Lys Phe His Thr Ser Arg Pro Glu Ser Phe
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Ala Ile Tyr Lys Arg Thr Arg Glu Asp Gly Pro Trp Ile Pro Tyr Gln
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Tyr Tyr Ser Gly Ser Cys Glu Asn Thr Tyr Ser Lys Ala Asn Arg Gly
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Phe Ile Arg Thr Gly Gly Asp Glu Gln Gln Ala Leu Cys Thr Asp Glu
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Phe Ser Asp Ile Ser Pro Leu Thr Gly Gly Asn Val Ala Phe Ser Thr
210 215 220

Leu Glu Gly Arg Pro Ser Ala Tyr Asn Phe Asp Asn Ser Pro Val Leu
225 230 235 240

Gln Glu Trp Val Thr Ala Thr Asp Ile Arg Val Thr Leu Asn Arg Leu
245 250 255

Asn Thr Phe Gly Asp Glu Val Phe Asn Asp Pro Lys Val Leu Lys Ser
260 265 270

Tyr Tyr Tyr Ala Ile Ser Asp Phe Ala Val Gly Gly Arg Cys Lys Cys
275 280 285

Asn Gly His Ala Ser Glu Cys Met Lys Asn Glu Phe Asp Lys Leu Val
290 295 300

Cys Asn Cys Lys His Asn Thr Tyr Gly Val Asp Cys Glu Lys Cys Leu
305 310 315 320

Pro Phe Phe Asn Asp Arg Pro Trp Arg Arg Ala Thr Ala Glu Ser Ala
325 330 335

Ser Glu Cys Leu Pro Cys Asp Cys Asn Gly Arg Ser Gln Glu Cys Tyr
340 345 350

Phe Asp Pro Glu Leu Tyr Arg Ser Thr Gly His Gly Gly His Cys Thr
355 360 365

Asn Cys Gln Asp Asn Thr Asp Gly Ala His Cys Glu Arg Cys Arg Glu
370 375 380

Asn Phe Phe Arg Leu Gly Asn Asn Glu Ala Cys Ser Ser Cys His Cys
385 390 395 400

Ser Pro Val Gly Ser Leu Ser Thr Gln Cys Asp Ser Tyr Gly Arg Cys
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Ser Cys Lys Pro Gly Val Met Gly Asp Lys Cys Asp Arg Cys Gln Pro
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Gly Phe His Ser Leu Thr Glu Ala Gly Cys Arg Pro Cys Ser Cys Asp
435 440 445

Pro Ser Gly Ser Ile Asp Glu Cys Asn Ile Glu Thr Gly Arg Cys Val
450 455 460

Cys Lys Asp Asn Val Glu Gly Phe Asn Cys Glu Arg Cys Lys Pro Gly
465 470 475 480

Phe Phe Asn Leu Glu Ser Ser Asn Pro Arg Gly Cys Thr Pro Cys Phe
485 490 495

Cys Phe Gly His Ser Ser Val Cys Thr Asn Ala Val Gly Tyr Ser Val
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Tyr Ser Ile Ser Ser Thr Phe Gln Ile Asp Glu Asp Gly Trp Arg Ala
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Ala Pro Ala Lys Phe Leu Gly Lys Gln Val Leu Ser Tyr Gly Gln Asn
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Leu Ser Phe Ser Phe Arg Val Asp Arg Arg Asp Thr Arg Leu Ser Ala
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Glu Asp Leu Val Leu Glu Gly Ala Gly Leu Arg Val Ser Val Pro Leu
595 600 605

Ile Ala Gln Gly Asn Ser Tyr Pro Ser Glu Thr Thr Val Lys Tyr Val
610 615 620

Phe Arg Leu His Glu Ala Thr Asp Tyr Pro Trp Arg Pro Ala Leu Thr
625 630 635 640

Pro Phe Glu Phe Gln Lys Leu Leu Asn Asn Leu Thr Ser Ile Lys Ile
645 650 655

Arg Gly Thr Tyr Ser Glu Arg Ser Ala Gly Tyr Leu Asp Asp Val Thr
 660 665 670
 Leu Ala Ser Ala Arg Pro Gly Pro Gly Val Pro Ala Thr Trp Val Glu
 675 680 685
 Ser Cys Thr Cys Pro Val Gly Tyr Gly Gly Gln Phe Cys Glu Met Cys
 690 695 700
 Leu Ser Gly Tyr Arg Arg Glu Thr Pro Asn Leu Gly Pro Tyr Ser Pro
 705 710 715 720
 Cys Val Leu Cys Ala Cys Asn Gly His Ser Glu Thr Cys Asp Pro Glu
 725 730 735
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 770 775 780
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 Asn Ile Asp Pro Asn Ala Val Gly Asn Cys Asn Arg Leu Thr Gly Glu
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 850 855 860
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 865 870 875 880
 Cys Lys Ala Cys Asn Cys Asn Leu Tyr Gly Thr Met Lys Gln Gln Ser
 885 890 895
 Ser Cys Asn Pro Val Thr Gly Gln Cys Glu Cys Leu Pro His Val Thr
 900 905 910

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Gly Gln Asp Cys Gly Ala Cys Asp Pro Gly Phe Tyr Asn Leu Gln Ser
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Gly Gln Gly Cys Glu Arg Cys Asp Cys His Ala Leu Gly Ser Thr Asn
930 935 940

Gly Gln Cys Asp Ile Arg Thr Gly Gln Cys Glu Cys Gln Pro Gly Ile
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Thr Gly Gln His Cys Glu Arg Cys Glu Val Asn His Phe Gly Phe Gly
965 970 975

Pro Glu Gly Cys Lys Pro Cys Asp Cys His Pro Glu Gly Ser Leu Ser
980 985 990

Leu Gln Cys Lys Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val
995 1000 1005

Gly Asn Arg Cys Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg
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Ser Trp Pro Gly Cys Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val
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Ser Leu Ile Ala Asn Leu Gly Thr Gly Asp Glu Met Val Thr Asp
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Gln Ala Phe Glu Asp Arg Leu Lys Glu Ala Glu Arg Glu Val Met
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Asp Leu Leu Arg Glu Ala Gln Asp Val Lys Asp Val Asp Gln Asn
1085 1090 1095

Leu Met Asp Arg Leu Gln Arg Val Asn Asn Thr Leu Ser Ser Gln
1100 1105 1110

Ile Ser Arg Leu Gln Asn Ile Arg Asn Thr Ile Glu Glu Thr Gly
1115 1120 1125

Asn Leu Ala Glu Gln Ala Arg Ala His Val Glu Asn Thr Glu Arg
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Leu Ile Glu Ile Ala Ser Arg Glu Leu Glu Lys Ala Lys Val Ala
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 Ala Glu Glu Ala Leu Arg Lys Ile Pro Ala Ile Asn Gln Thr Ile
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1385

1390

1395

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Lys	Thr	Leu	Pro	Ser	Gly	Cys	Phe	Asn	Thr	Pro	Ser	Ile	Glu	Lys
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Pro

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