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SEQUENCE LISTING

<110> GENETHON et al.

<120> ACID-ALPHA GLUCOSIDASE VARIANTS AND USES THEREOF

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<170> PatentIn version 3.3

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Phe Pro Pro Ser Tyr Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser
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Glu Met Gly Tyr Thr Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe
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Pro Lys Asp Ile Leu Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu
165 170 175

Asn Arg Leu His Phe Thr Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu
180 185 190

Val Pro Leu Glu Thr Pro His Val His Ser Arg Ala Pro Ser Pro Leu
195 200 205

Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg
210 215 220

Gln Leu Asp Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
225 230 235 240

Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr
245 250 255

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

485

490

495

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Asp Gly Met Trp Ile Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly
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Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val
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Pro Gly Val Val Gly Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser
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Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly
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Leu Thr Glu Ala Ile Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly
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Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg
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Tyr Ala Gly His Trp Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu
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Ala Ser Ser Val Pro Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro
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Leu Val Gly Ala Asp Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu
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Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
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Asn His Asn Ser Leu Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser
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Glu Pro Ala Gln Gln Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala
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Leu Leu Pro His Leu Tyr Thr Leu Phe His Gln Ala His Val Ala Gly
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Glu Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser
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Thr Trp Thr Val Asp His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile
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Thr Pro Val Leu Gln Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro
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Leu Gly Thr Trp Tyr Asp Leu Gln Thr Val Pro Val Glu Ala Leu Gly
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Ser Leu Pro Pro Pro Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser
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Glu Gly Gln Trp Val Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val
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His Leu Arg Ala Gly Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr
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Thr Thr Glu Ser Arg Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr
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Lys Gly Gly Glu Ala Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser
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Leu Glu Val Leu Glu Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala
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Arg Asn Asn Thr Ile Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly
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Ala Gly Leu Gln Leu Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala
 900 905 910

Pro Gln Gln Val Leu Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr
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Glu Gln Phe Leu Val Ser Trp Cys
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<400> 24

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<223> sp8

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<212> PRT

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<223> hGAA-delta-8

<400> 29

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Ala Gln Ala His Pro Gly Arg Pro Arg Ala Val Pro Thr Gln Cys Asp
 35 40 45

Val Pro Pro Asn Ser Arg Phe Asp Cys Ala Pro Asp Lys Ala Ile Thr
 50 55 60

Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Ile Pro Ala Lys Gln
 65 70 75 80

Gly Leu Gln Gly Ala Gln Met Gly Gln Pro Trp Cys Phe Phe Pro Pro
 85 90 95

Ser Tyr Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser Glu Met Gly
 100 105 110

Tyr Thr Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe Pro Lys Asp
 115 120 125

Ile Leu Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu Asn Arg Leu
 130 135 140

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

Glu Thr Pro His Val His Ser Arg Ala Pro Ser Pro Leu Tyr Ser Val
 165 170 175

Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg Gln Leu Asp
 180 185 190

Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe Phe Ala Asp
 195 200 205

Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr Ile Thr Gly
 210 215 220

Leu Ala Glu His Leu Ser Pro Leu Met Leu Ser Thr Ser Trp Thr Arg
 225 230 235 240

Ile Thr Leu Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly Ala Asn Leu
 245 250 255

Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly Gly Ser Ala
 260 265 270

His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val Val Leu Gln
 275 280 285

Pro Ser Pro Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile Leu Asp Val
 290 295 300

Tyr Ile Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln Gln Tyr Leu
 305 310 315 320

Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly Leu Gly Phe
 325 330 335

His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr Arg Gln Val
 340 345 350

Val Glu Asn Met Thr Arg Ala His Phe Pro Leu Asp Val Gln Trp Asn
 355 360 365

Asp Leu Asp Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe Asn Lys Asp
 370 375 380

Gly Phe Arg Asp Phe Pro Ala Met Val Gln Glu Leu His Gln Gly Gly
 385 390 395 400

Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser Ser Gly Pro
 405 410 415

Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg Gly Val Phe
 420 425 430

Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val Trp Pro Gly
 435 440 445

Ser Thr Ala Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu Ala Trp Trp
 450 455 460

Glu Asp Met Val Ala Glu Phe His Asp Gln Val Pro Phe Asp Gly Met
 465 470 475 480

Trp Ile Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly Ser Glu Asp
 485 490 495

Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val Pro Gly Val
 500 505 510

Val Gly Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser Ser His Gln

515

520

525

Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly Leu Thr Glu
 530 535 540

Ala Ile Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly Thr Arg Pro
 545 550 555 560

Phe Val Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg Tyr Ala Gly
 565 570 575

His Trp Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu Ala Ser Ser
 580 585 590

Val Pro Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro Leu Val Gly
 595 600 605

Ala Asp Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu Leu Cys Val
 610 615 620

Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg Asn His Asn
 625 630 635 640

Ser Leu Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser Glu Pro Ala
 645 650 655

Gln Gln Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala Leu Leu Pro
 660 665 670

His Leu Tyr Thr Leu Phe His Gln Ala His Val Ala Gly Glu Thr Val
 675 680 685

Ala Arg Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser Thr Trp Thr
 690 695 700

Val Asp His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile Thr Pro Val
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Leu Gln Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro Leu Gly Thr
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Trp Tyr Asp Leu Gln Thr Val Pro Val Glu Ala Leu Gly Ser Leu Pro
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Pro Pro Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser Glu Gly Gln
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Trp Val Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val His Leu Arg
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Ala Gly Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr Thr Thr Glu
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Ser Arg Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr Lys Gly Gly
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Glu Ala Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser Leu Glu Val
 820 825 830

Leu Glu Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala Arg Asn Asn
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Thr Ile Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly Ala Gly Leu
 850 855 860

Gln Leu Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala Pro Gln Gln
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Val Leu Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr Ser Pro Asp
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Thr Lys Val Leu Asp Ile Cys Val Ser Leu Leu Met Gly Glu Gln Phe
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Leu Val Ser Trp Cys
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Gln Gly Ala Gln Met Gly Gln Pro Trp Cys Phe Phe Pro Pro Ser Tyr
50 55 60

Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser Glu Met Gly Tyr Thr
65 70 75 80

Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe Pro Lys Asp Ile Leu
85 90 95

Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu Asn Arg Leu His Phe
100 105 110

Thr Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu Val Pro Leu Glu Thr
115 120 125

Pro His Val His Ser Arg Ala Pro Ser Pro Leu Tyr Ser Val Glu Phe
130 135 140

Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg Gln Leu Asp Gly Arg
 145 150 155 160

Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe Phe Ala Asp Gln Phe
 165 170 175

Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr Ile Thr Gly Leu Ala
 180 185 190

Glu His Leu Ser Pro Leu Met Leu Ser Thr Ser Trp Thr Arg Ile Thr
 195 200 205

Leu Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly Ala Asn Leu Tyr Gly
 210 215 220

Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly Gly Ser Ala His Gly
 225 230 235 240

Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val Val Leu Gln Pro Ser
 245 250 255

Pro Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile Leu Asp Val Tyr Ile
 260 265 270

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

Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly Leu Gly Phe His Leu
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Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr Arg Gln Val Val Glu
 305 310 315 320

Asn Met Thr Arg Ala His Phe Pro Leu Asp Val Gln Trp Asn Asp Leu
 325 330 335

Asp Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe Asn Lys Asp Gly Phe
 340 345 350

Arg Asp Phe Pro Ala Met Val Gln Glu Leu His Gln Gly Gly Arg Arg
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Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser Ser Gly Pro Ala Gly
 370 375 380

Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg Gly Val Phe Ile Thr
 385 390 395 400

Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val Trp Pro Gly Ser Thr
 405 410 415

Ala Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu Ala Trp Trp Glu Asp
 420 425 430

Met Val Ala Glu Phe His Asp Gln Val Pro Phe Asp Gly Met Trp Ile
 435 440 445

Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly Ser Glu Asp Gly Cys
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Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val Pro Gly Val Val Gly
 465 470 475 480

Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser Ser His Gln Phe Leu
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Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly Leu Thr Glu Ala Ile
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Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly Thr Arg Pro Phe Val
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Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg Tyr Ala Gly His Trp
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Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu Ala Ser Ser Val Pro
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Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro Leu Val Gly Ala Asp
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Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu Leu Cys Val Arg Trp
 580 585 590

Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg Asn His Asn Ser Leu
 595 600 605

Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser Glu Pro Ala Gln Gln
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Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala Leu Leu Pro His Leu
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Tyr Thr Leu Phe His Gln Ala His Val Ala Gly Glu Thr Val Ala Arg
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Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser Thr Trp Thr Val Asp
 660 665 670

His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile Thr Pro Val Leu Gln
 675 680 685

Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro Leu Gly Thr Trp Tyr
 690 695 700

Asp Leu Gln Thr Val Pro Val Glu Ala Leu Gly Ser Leu Pro Pro Pro
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Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser Glu Gly Gln Trp Val

725

730

735

Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val His Leu Arg Ala Gly
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Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr Thr Thr Glu Ser Arg
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Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr Lys Gly Gly Glu Ala
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Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser Leu Glu Val Leu Glu
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Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala Arg Asn Asn Thr Ile
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Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly Ala Gly Leu Gln Leu
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Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala Pro Gln Gln Val Leu
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Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr Ser Pro Asp Thr Lys
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Pro Pro Tyr Trp Gly Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser
340 345 350

Ser Thr Ala Ile Thr Arg Gln Val Val Glu Asn Met Thr Arg Ala His
355 360 365

Phe Pro Leu Asp Val Gln Trp Asn Asp Leu Asp Tyr Met Asp Ser Arg
370 375 380

Arg Asp Phe Thr Phe Asn Lys Asp Gly Phe Arg Asp Phe Pro Ala Met
385 390 395 400

Val Gln Glu Leu His Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp
405 410 415

Pro Ala Ile Ser Ser Ser Gly Pro Ala Gly Ser Tyr Arg Pro Tyr Asp
420 425 430

Glu Gly Leu Arg Arg Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro
435 440 445

Leu Ile Gly Lys Val Trp Pro Gly Ser Thr Ala Phe Pro Asp Phe Thr
450 455 460

Asn Pro Thr Ala Leu Ala Trp Trp Glu Asp Met Val Ala Glu Phe His
465 470 475 480

Asp Gln Val Pro Phe Asp Gly Met Trp Ile Asp Met Asn Glu Pro Ser
485 490 495

Asn Phe Ile Arg Gly Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu Glu
500 505 510

Asn Pro Pro Tyr Val Pro Gly Val Val Gly Gly Thr Leu Gln Ala Ala
 515 520 525

Thr Ile Cys Ala Ser Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu
 530 535 540

His Asn Leu Tyr Gly Leu Thr Glu Ala Ile Ala Ser His Arg Ala Leu
 545 550 555 560

Val Lys Ala Arg Gly Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe
 565 570 575

Ala Gly His Gly Arg Tyr Ala Gly His Trp Thr Gly Asp Val Trp Ser
 580 585 590

Ser Trp Glu Gln Leu Ala Ser Ser Val Pro Glu Ile Leu Gln Phe Asn
 595 600 605

Leu Leu Gly Val Pro Leu Val Gly Ala Asp Val Cys Gly Phe Leu Gly
 610 615 620

Asn Thr Ser Glu Glu Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe
 625 630 635 640

Tyr Pro Phe Met Arg Asn His Asn Ser Leu Leu Ser Leu Pro Gln Glu
 645 650 655

Pro Tyr Ser Phe Ser Glu Pro Ala Gln Gln Ala Met Arg Lys Ala Leu
 660 665 670

Thr Leu Arg Tyr Ala Leu Leu Pro His Leu Tyr Thr Leu Phe His Gln
 675 680 685

Ala His Val Ala Gly Glu Thr Val Ala Arg Pro Leu Phe Leu Glu Phe
 690 695 700

Pro Lys Asp Ser Ser Thr Trp Thr Val Asp His Gln Leu Leu Trp Gly

720

735

750

765

780

800

815

830

845

860

880

895

910

Ser Leu Leu Met Gly Glu Gln Phe Leu Val Ser Trp Cys
 915 920 925

<210> 37
 <211> 952
 <212> PRT
 <213> homo sapiens

<400> 37

Met Gly Val Arg His Pro Pro Cys Ser His Arg Leu Leu Ala Val Cys
 1 5 10 15

Ala Leu Val Ser Leu Ala Thr Ala Ala Leu Leu Gly His Ile Leu Leu
 20 25 30

His Asp Phe Leu Leu Val Pro Arg Glu Leu Ser Gly Ser Ser Pro Val
 35 40 45

Leu Glu Glu Thr His Pro Ala His Gln Gln Gly Ala Ser Arg Pro Gly
 50 55 60

Pro Arg Asp Ala Gln Ala His Pro Gly Arg Pro Arg Ala Val Pro Thr
 65 70 75 80

Gln Cys Asp Val Pro Pro Asn Ser Arg Phe Asp Cys Ala Pro Asp Lys
 85 90 95

Ala Ile Thr Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Ile Pro
 100 105 110

Ala Lys Gln Gly Leu Gln Gly Ala Gln Met Gly Gln Pro Trp Cys Phe
 115 120 125

Phe Pro Pro Ser Tyr Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser
 130 135 140

Glu Met Gly Tyr Thr Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe
 145 150 155 160

Pro Lys Asp Ile Leu Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu
 165 170 175

Asn Arg Leu His Phe Thr Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu
 180 185 190

Val Pro Leu Glu Thr Pro Arg Val His Ser Arg Ala Pro Ser Pro Leu
 195 200 205

Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val His Arg
 210 215 220

Gln Leu Asp Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
 225 230 235 240

Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr
 245 250 255

Ile Thr Gly Leu Ala Glu His Leu Ser Pro Leu Met Leu Ser Thr Ser
 260 265 270

Trp Thr Arg Ile Thr Leu Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly
 275 280 285

Ala Asn Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly
 290 295 300

Gly Ser Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val
 305 310 315 320

Val Leu Gln Pro Ser Pro Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile
 325 330 335

Leu Asp Val Tyr Ile Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln

340

345

350

Gln Tyr Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly
 355 360 365

Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr
 370 375 380

Arg Gln Val Val Glu Asn Met Thr Arg Ala His Phe Pro Leu Asp Val
 385 390 395 400

Gln Trp Asn Asp Leu Asp Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe
 405 410 415

Asn Lys Asp Gly Phe Arg Asp Phe Pro Ala Met Val Gln Glu Leu His
 420 425 430

Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser
 435 440 445

Ser Gly Pro Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg
 450 455 460

Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val
 465 470 475 480

Trp Pro Gly Ser Thr Ala Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu
 485 490 495

Ala Trp Trp Glu Asp Met Val Ala Glu Phe His Asp Gln Val Pro Phe
 500 505 510

Asp Gly Met Trp Ile Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly
 515 520 525

Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val
 530 535 540

Pro Gly Val Val Gly Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser
 545 550 555 560

Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly
 565 570 575

Leu Thr Glu Ala Ile Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly
 580 585 590

Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg
 595 600 605

Tyr Ala Gly His Trp Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu
 610 615 620

Ala Ser Ser Val Pro Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro
 625 630 635 640

Leu Val Gly Ala Asp Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu
 645 650 655

Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
 660 665 670

Asn His Asn Ser Leu Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser
 675 680 685

Glu Pro Ala Gln Gln Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala
 690 695 700

Leu Leu Pro His Leu Tyr Thr Leu Phe His Gln Ala His Val Ala Gly
 705 710 715 720

Glu Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser
 725 730 735

Thr Trp Thr Val Asp His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile
 740 745 750

Thr Pro Val Leu Gln Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro
 755 760 765

Leu Gly Thr Trp Tyr Asp Leu Gln Thr Val Pro Ile Glu Ala Leu Gly
 770 775 780

Ser Leu Pro Pro Pro Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser
 785 790 795 800

Glu Gly Gln Trp Val Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val
 805 810 815

His Leu Arg Ala Gly Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr
 820 825 830

Thr Thr Glu Ser Arg Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr
 835 840 845

Lys Gly Gly Glu Ala Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser
 850 855 860

Leu Glu Val Leu Glu Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala
 865 870 875 880

Arg Asn Asn Thr Ile Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly
 885 890 895

Ala Gly Leu Gln Leu Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala
 900 905 910

Pro Gln Gln Val Leu Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr
 915 920 925

Ser Pro Asp Thr Lys Val Leu Asp Ile Cys Val Ser Leu Leu Met Gly
 930 935 940

Glu Gln Phe Leu Val Ser Trp Cys
 945 950

<210> 38
 <211> 952
 <212> PRT
 <213> homo sapiens
 <400> 38

Met Gly Val Arg His Pro Pro Cys Ser His Arg Leu Leu Ala Val Cys
 1 5 10 15

Ala Leu Val Ser Leu Ala Thr Ala Ala Leu Leu Gly His Ile Leu Leu
 20 25 30

His Asp Phe Leu Leu Val Pro Arg Glu Leu Ser Gly Ser Ser Pro Val
 35 40 45

Leu Glu Glu Thr His Pro Ala His Gln Gln Gly Ala Ser Arg Pro Gly
 50 55 60

Pro Arg Asp Ala Gln Ala His Pro Gly Arg Pro Arg Ala Val Pro Thr
 65 70 75 80

Gln Cys Asp Val Pro Pro Asn Ser Arg Phe Asp Cys Ala Pro Asp Lys
 85 90 95

Ala Ile Thr Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Ile Pro
 100 105 110

Ala Lys Gln Gly Leu Gln Gly Ala Gln Met Gly Gln Pro Trp Cys Phe
 115 120 125

Phe Pro Pro Ser Tyr Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser
 130 135 140

Glu Met Gly Tyr Thr Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe
 145 150 155 160

Pro Lys Asp Ile Leu Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu
 165 170 175

Asn Arg Leu His Phe Thr Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu
 180 185 190

Val Pro Leu Glu Thr Pro His Val His Ser Arg Ala Pro Ser Pro Leu
 195 200 205

Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg
 210 215 220

Gln Leu Asp Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
 225 230 235 240

Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr
 245 250 255

Ile Thr Gly Leu Ala Glu His Leu Ser Pro Leu Met Leu Ser Thr Ser
 260 265 270

Trp Thr Arg Ile Thr Leu Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly
 275 280 285

Ala Asn Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly
 290 295 300

Gly Ser Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val
 305 310 315 320

Val Leu Gln Pro Ser Pro Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile
 325 330 335

Leu Asp Val Tyr Ile Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln
 340 345 350

Gln Tyr Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly
 355 360 365

Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr
 370 375 380

Arg Gln Val Val Glu Asn Met Thr Arg Ala His Phe Pro Leu Asp Val
 385 390 395 400

Gln Trp Asn Asp Leu Asp Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe
 405 410 415

Asn Lys Asp Gly Phe Arg Asp Phe Pro Ala Met Val Gln Glu Leu His
 420 425 430

Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser
 435 440 445

Ser Gly Pro Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg
 450 455 460

Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val
 465 470 475 480

Trp Pro Gly Ser Thr Ala Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu
 485 490 495

Ala Trp Trp Glu Asp Met Val Ala Glu Phe His Asp Gln Val Pro Phe
 500 505 510

Asp Gly Met Trp Ile Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly
 515 520 525

Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val
 530 535 540

Pro Gly Val Val Gly Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser
 545 550 555 560

Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly
 565 570 575

Leu Thr Glu Ala Ile Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly
 580 585 590

Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg
 595 600 605

Tyr Ala Gly His Trp Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu
 610 615 620

Ala Ser Ser Val Pro Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro
 625 630 635 640

Leu Val Gly Ala Asp Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu
 645 650 655

Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
 660 665 670

Asn His Asn Ser Leu Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser
 675 680 685

Glu Pro Ala Gln Gln Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala
 690 695 700

Leu Leu Pro His Leu Tyr Thr Leu Phe His Gln Ala His Val Ala Gly
 705 710 715 720

Glu Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser

725

730

735

Thr Trp Thr Val Asp His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile
 740 745 750

Thr Pro Val Leu Gln Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro
 755 760 765

Leu Gly Thr Trp Tyr Asp Leu Gln Thr Val Pro Ile Glu Ala Leu Gly
 770 775 780

Ser Leu Pro Pro Pro Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser
 785 790 795 800

Glu Gly Gln Trp Val Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val
 805 810 815

His Leu Arg Ala Gly Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr
 820 825 830

Thr Thr Glu Ser Arg Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr
 835 840 845

Lys Gly Gly Glu Ala Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser
 850 855 860

Leu Glu Val Leu Glu Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala
 865 870 875 880

Arg Asn Asn Thr Ile Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly
 885 890 895

Ala Gly Leu Gln Leu Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala
 900 905 910

Pro Gln Gln Val Leu Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr
 915 920 925

Ser Pro Asp Thr Lys Val Leu Asp Ile Cys Val Ser Leu Leu Met Gly
 930 935 940

Glu Gln Phe Leu Val Ser Trp Cys
 945 950

<210> 39
 <211> 957
 <212> PRT
 <213> homo sapiens

<400> 39

Met Gly Val Arg His Pro Pro Cys Ser His Arg Leu Leu Ala Val Cys
 1 5 10 15

Ala Leu Val Ser Leu Ala Thr Ala Ala Leu Leu Gly His Ile Leu Leu
 20 25 30

His Asp Phe Leu Leu Val Pro Arg Glu Leu Ser Gly Ser Ser Pro Val
 35 40 45

Leu Glu Glu Thr His Pro Ala His Gln Gln Gly Ala Ser Arg Pro Gly
 50 55 60

Pro Arg Asp Ala Gln Ala His Pro Gly Arg Pro Arg Ala Val Pro Thr
 65 70 75 80

Gln Cys Asp Val Pro Pro Asn Ser Arg Phe Asp Cys Ala Pro Asp Lys
 85 90 95

Ala Ile Thr Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Ile Pro
 100 105 110

Ala Lys Gln Gly Leu Gln Gly Ala Gln Met Gly Gln Pro Trp Cys Phe
 115 120 125

Phe Pro Pro Ser Tyr Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser
 130 135 140

Glu Met Gly Tyr Thr Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe
 145 150 155 160

Pro Lys Asp Ile Leu Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu
 165 170 175

Asn Arg Leu His Phe Thr Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu
 180 185 190

Val Pro Leu Glu Thr Pro His Val His Ser Arg Ala Pro Ser Pro Leu
 195 200 205

Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg
 210 215 220

Gln Leu Asp Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
 225 230 235 240

Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr
 245 250 255

Ile Thr Gly Leu Ala Glu His Leu Ser Pro Leu Met Leu Ser Thr Ser
 260 265 270

Trp Thr Arg Ile Thr Leu Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly
 275 280 285

Ala Asn Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly
 290 295 300

Gly Ser Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val
 305 310 315 320

Val Leu Gln Pro Ser Pro Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile

325

330

335

Leu Asp Val Tyr Ile Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln
 340 345 350

Gln Tyr Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly
 355 360 365

Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr
 370 375 380

Arg Gln Val Val Glu Asn Met Thr Arg Ala His Phe Pro Leu Asp Val
 385 390 395 400

Gln Trp Asn Asp Leu Asp Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe
 405 410 415

Asn Lys Asp Gly Phe Arg Asp Phe Pro Ala Met Val Gln Glu Leu His
 420 425 430

Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser
 435 440 445

Ser Gly Pro Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg
 450 455 460

Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val
 465 470 475 480

Trp Pro Gly Ser Thr Ala Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu
 485 490 495

Ala Trp Trp Glu Asp Met Val Ala Glu Phe His Asp Gln Val Pro Phe
 500 505 510

Asp Gly Met Trp Ile Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly
 515 520 525

Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val
 530 535 540

Pro Gly Val Val Gly Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser
 545 550 555 560

Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly
 565 570 575

Leu Thr Glu Ala Ile Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly
 580 585 590

Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg
 595 600 605

Tyr Ala Gly His Trp Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu
 610 615 620

Ala Ser Ser Val Pro Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro
 625 630 635 640

Leu Val Gly Ala Asp Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu
 645 650 655

Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
 660 665 670

Asn His Asn Ser Leu Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser
 675 680 685

Glu Pro Ala Gln Gln Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala
 690 695 700

Leu Leu Pro His Leu Tyr Thr Leu Phe His Gln Ala His Val Ala Gly
 705 710 715 720

Glu Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser
 725 730 735

Thr Trp Thr Val Asp His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile
 740 745 750

Thr Pro Val Leu Gln Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro
 755 760 765

Leu Gly Thr Trp Tyr Asp Leu Gln Thr Val Pro Ile Glu Ala Leu Gly
 770 775 780

Ser Leu Pro Pro Pro Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser
 785 790 795 800

Glu Gly Gln Trp Val Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val
 805 810 815

His Leu Arg Ala Gly Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr
 820 825 830

Thr Thr Glu Ser Arg Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr
 835 840 845

Lys Gly Gly Glu Ala Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser
 850 855 860

Leu Glu Val Leu Glu Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala
 865 870 875 880

Arg Asn Asn Thr Ile Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly
 885 890 895

Ala Gly Leu Gln Leu Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala
 900 905 910

Pro Gln Gln Val Leu Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr
 915 920 925

Ser Pro Asp Thr Lys Ala Arg Gly Pro Arg Val Leu Asp Ile Cys Val
 930 935 940

Ser Leu Leu Met Gly Glu Gln Phe Leu Val Ser Trp Cys
 945 950 955

<210> 40

<211> 952

<212> PRT

<213> homo sapiens

<400> 40

Met Gly Val Arg His Pro Pro Cys Ser His Arg Leu Leu Ala Val Cys
 1 5 10 15

Ala Leu Val Ser Leu Ala Thr Ala Ala Leu Leu Gly His Ile Leu Leu
 20 25 30

His Asp Phe Leu Leu Val Pro Arg Glu Leu Ser Gly Ser Ser Pro Val
 35 40 45

Leu Glu Glu Thr His Pro Ala His Gln Gln Gly Ala Ser Arg Pro Gly
 50 55 60

Pro Arg Asp Ala Gln Ala His Pro Gly Arg Pro Arg Ala Val Pro Thr
 65 70 75 80

Gln Cys Asp Val Pro Pro Asn Ser Arg Phe Asp Cys Ala Pro Asp Lys
 85 90 95

Ala Ile Thr Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Ile Pro
 100 105 110

Ala Lys Gln Gly Leu Gln Gly Ala Gln Met Gly Gln Pro Trp Cys Phe
 115 120 125

Phe Pro Pro Ser Tyr Pro Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser
 130 135 140

Glu Met Gly Tyr Thr Ala Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe
 145 150 155 160

Pro Lys Asp Ile Leu Thr Leu Arg Leu Asp Val Met Met Glu Thr Glu
 165 170 175

Asn Arg Leu His Phe Thr Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu
 180 185 190

Val Pro Leu Glu Thr Pro Arg Val His Ser Arg Ala Pro Ser Pro Leu
 195 200 205

Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val His Arg
 210 215 220

Gln Leu Asp Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
 225 230 235 240

Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr
 245 250 255

Ile Thr Gly Leu Ala Glu His Leu Ser Pro Leu Met Leu Ser Thr Ser
 260 265 270

Trp Thr Arg Ile Thr Leu Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly
 275 280 285

Ala Asn Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly
 290 295 300

Gly Ser Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val
 305 310 315 320

Val Leu Gln Pro Ser Pro Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile
 325 330 335

Leu Asp Val Tyr Ile Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln
 340 345 350

Gln Tyr Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly
 355 360 365

Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr
 370 375 380

Arg Gln Val Val Glu Asn Met Thr Arg Ala His Phe Pro Leu Asp Val
 385 390 395 400

Gln Trp Asn Asp Leu Asp Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe
 405 410 415

Asn Lys Asp Gly Phe Arg Asp Phe Pro Ala Met Val Gln Glu Leu His
 420 425 430

Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser
 435 440 445

Ser Gly Pro Ala Gly Ser Tyr Arg Leu Tyr Asp Glu Gly Leu Arg Arg
 450 455 460

Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val
 465 470 475 480

Trp Pro Gly Ser Thr Ala Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu
 485 490 495

Ala Trp Trp Glu Asp Met Val Ala Glu Phe His Asp Gln Val Pro Phe
 500 505 510

Asp Gly Met Trp Ile Asp Met Asn Glu Pro Ser Asn Phe Ile Arg Gly
 515 520 525

Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val
 530 535 540

Pro Gly Val Val Gly Gly Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser
 545 550 555 560

Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly
 565 570 575

Leu Thr Glu Ala Ile Ala Ser His Arg Ala Leu Val Lys Ala Arg Gly
 580 585 590

Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ala Gly His Gly Arg
 595 600 605

Tyr Ala Gly His Trp Thr Gly Asp Val Trp Ser Ser Trp Glu Gln Leu
 610 615 620

Ala Ser Ser Val Pro Glu Ile Leu Gln Phe Asn Leu Leu Gly Val Pro
 625 630 635 640

Leu Val Gly Ala Asp Val Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu
 645 650 655

Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
 660 665 670

Asn His Asn Ser Leu Leu Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser
 675 680 685

Glu Pro Ala Gln Gln Ala Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala
 690 695 700

Leu Leu Pro His Leu Tyr Thr Leu Phe His Gln Ala His Val Ala Gly

705		710		715		720
Glu Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser						
		725		730		735
Thr Trp Thr Val Asp His Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile						
		740		745		750
Thr Pro Val Leu Gln Ala Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro						
		755		760		765
Leu Gly Thr Trp Tyr Asp Leu Gln Thr Val Pro Ile Glu Ala Leu Gly						
		770		775		780
Ser Leu Pro Pro Pro Pro Ala Ala Pro Arg Glu Pro Ala Ile His Ser						
785		790		795		800
Glu Gly Gln Trp Val Thr Leu Pro Ala Pro Leu Asp Thr Ile Asn Val						
		805		810		815
His Leu Arg Ala Gly Tyr Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr						
		820		825		830
Thr Thr Glu Ser Arg Gln Gln Pro Met Ala Leu Ala Val Ala Leu Thr						
		835		840		845
Lys Gly Gly Glu Ala Arg Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser						
		850		855		860
Leu Glu Val Leu Glu Arg Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala						
865		870		875		880
Arg Asn Asn Thr Ile Val Asn Glu Leu Val Arg Val Thr Ser Glu Gly						
		885		890		895
Ala Gly Leu Gln Leu Gln Lys Val Thr Val Leu Gly Val Ala Thr Ala						
		900		905		910

Pro Gln Gln Val Leu Ser Asn Gly Val Pro Val Ser Asn Phe Thr Tyr
 915 920 925

Ser Pro Asp Thr Lys Val Leu Asp Ile Cys Val Ser Leu Leu Met Gly
 930 935 940

Glu Gln Phe Leu Val Ser Trp Cys
 945 950

<210> 41
 <211> 896
 <212> PRT
 <213> artificial

<220>
 <223> hGAA-delta-29

<400> 41

Gln Gln Gly Ala Ser Arg Pro Gly Pro Arg Asp Ala Gln Ala His Pro
 1 5 10 15

Gly Arg Pro Arg Ala Val Pro Thr Gln Cys Asp Val Pro Pro Asn Ser
 20 25 30

Arg Phe Asp Cys Ala Pro Asp Lys Ala Ile Thr Gln Glu Gln Cys Glu
 35 40 45

Ala Arg Gly Cys Cys Tyr Ile Pro Ala Lys Gln Gly Leu Gln Gly Ala
 50 55 60

Gln Met Gly Gln Pro Trp Cys Phe Phe Pro Pro Ser Tyr Pro Ser Tyr
 65 70 75 80

Lys Leu Glu Asn Leu Ser Ser Ser Glu Met Gly Tyr Thr Ala Thr Leu
 85 90 95

Thr Arg Thr Thr Pro Thr Phe Phe Pro Lys Asp Ile Leu Thr Leu Arg

100

105

110

Leu Asp Val Met Met Glu Thr Glu Asn Arg Leu His Phe Thr Ile Lys
 115 120 125

Asp Pro Ala Asn Arg Arg Tyr Glu Val Pro Leu Glu Thr Pro His Val
 130 135 140

His Ser Arg Ala Pro Ser Pro Leu Tyr Ser Val Glu Phe Ser Glu Glu
 145 150 155 160

Pro Phe Gly Val Ile Val Arg Arg Gln Leu Asp Gly Arg Val Leu Leu
 165 170 175

Asn Thr Thr Val Ala Pro Leu Phe Phe Ala Asp Gln Phe Leu Gln Leu
 180 185 190

Ser Thr Ser Leu Pro Ser Gln Tyr Ile Thr Gly Leu Ala Glu His Leu
 195 200 205

Ser Pro Leu Met Leu Ser Thr Ser Trp Thr Arg Ile Thr Leu Trp Asn
 210 215 220

Arg Asp Leu Ala Pro Thr Pro Gly Ala Asn Leu Tyr Gly Ser His Pro
 225 230 235 240

Phe Tyr Leu Ala Leu Glu Asp Gly Gly Ser Ala His Gly Val Phe Leu
 245 250 255

Leu Asn Ser Asn Ala Met Asp Val Val Leu Gln Pro Ser Pro Ala Leu
 260 265 270

Ser Trp Arg Ser Thr Gly Gly Ile Leu Asp Val Tyr Ile Phe Leu Gly
 275 280 285

Pro Glu Pro Lys Ser Val Val Gln Gln Tyr Leu Asp Val Val Gly Tyr
 290 295 300

Pro Phe Met Pro Pro Tyr Trp Gly Leu Gly Phe His Leu Cys Arg Trp
 305 310 315 320

Gly Tyr Ser Ser Thr Ala Ile Thr Arg Gln Val Val Glu Asn Met Thr
 325 330 335

Arg Ala His Phe Pro Leu Asp Val Gln Trp Asn Asp Leu Asp Tyr Met
 340 345 350

Asp Ser Arg Arg Asp Phe Thr Phe Asn Lys Asp Gly Phe Arg Asp Phe
 355 360 365

Pro Ala Met Val Gln Glu Leu His Gln Gly Gly Arg Arg Tyr Met Met
 370 375 380

Ile Val Asp Pro Ala Ile Ser Ser Ser Gly Pro Ala Gly Ser Tyr Arg
 385 390 395 400

Pro Tyr Asp Glu Gly Leu Arg Arg Gly Val Phe Ile Thr Asn Glu Thr
 405 410 415

Gly Gln Pro Leu Ile Gly Lys Val Trp Pro Gly Ser Thr Ala Phe Pro
 420 425 430

Asp Phe Thr Asn Pro Thr Ala Leu Ala Trp Trp Glu Asp Met Val Ala
 435 440 445

Glu Phe His Asp Gln Val Pro Phe Asp Gly Met Trp Ile Asp Met Asn
 450 455 460

Glu Pro Ser Asn Phe Ile Arg Gly Ser Glu Asp Gly Cys Pro Asn Asn
 465 470 475 480

Glu Leu Glu Asn Pro Pro Tyr Val Pro Gly Val Val Gly Gly Thr Leu
 485 490 495

Gln Ala Ala Thr Ile Cys Ala Ser Ser His Gln Phe Leu Ser Thr His
500 505 510

Tyr Asn Leu His Asn Leu Tyr Gly Leu Thr Glu Ala Ile Ala Ser His
515 520 525

Arg Ala Leu Val Lys Ala Arg Gly Thr Arg Pro Phe Val Ile Ser Arg
530 535 540

Ser Thr Phe Ala Gly His Gly Arg Tyr Ala Gly His Trp Thr Gly Asp
545 550 555 560

Val Trp Ser Ser Trp Glu Gln Leu Ala Ser Ser Val Pro Glu Ile Leu
565 570 575

Gln Phe Asn Leu Leu Gly Val Pro Leu Val Gly Ala Asp Val Cys Gly
580 585 590

Phe Leu Gly Asn Thr Ser Glu Glu Leu Cys Val Arg Trp Thr Gln Leu
595 600 605

Gly Ala Phe Tyr Pro Phe Met Arg Asn His Asn Ser Leu Leu Ser Leu
610 615 620

Pro Gln Glu Pro Tyr Ser Phe Ser Glu Pro Ala Gln Gln Ala Met Arg
625 630 635 640

Lys Ala Leu Thr Leu Arg Tyr Ala Leu Leu Pro His Leu Tyr Thr Leu
645 650 655

Phe His Gln Ala His Val Ala Gly Glu Thr Val Ala Arg Pro Leu Phe
660 665 670

Leu Glu Phe Pro Lys Asp Ser Ser Thr Trp Thr Val Asp His Gln Leu
675 680 685

Leu Trp Gly Glu Ala Leu Leu Ile Thr Pro Val Leu Gln Ala Gly Lys
690 695 700

Ala Glu Val Thr Gly Tyr Phe Pro Leu Gly Thr Trp Tyr Asp Leu Gln
705 710 715 720

Thr Val Pro Val Glu Ala Leu Gly Ser Leu Pro Pro Pro Pro Ala Ala
725 730 735

Pro Arg Glu Pro Ala Ile His Ser Glu Gly Gln Trp Val Thr Leu Pro
740 745 750

Ala Pro Leu Asp Thr Ile Asn Val His Leu Arg Ala Gly Tyr Ile Ile
755 760 765

Pro Leu Gln Gly Pro Gly Leu Thr Thr Thr Glu Ser Arg Gln Gln Pro
770 775 780

Met Ala Leu Ala Val Ala Leu Thr Lys Gly Gly Glu Ala Arg Gly Glu
785 790 795 800

Leu Phe Trp Asp Asp Gly Glu Ser Leu Glu Val Leu Glu Arg Gly Ala
805 810 815

Tyr Thr Gln Val Ile Phe Leu Ala Arg Asn Asn Thr Ile Val Asn Glu
820 825 830

Leu Val Arg Val Thr Ser Glu Gly Ala Gly Leu Gln Leu Gln Lys Val
835 840 845

Thr Val Leu Gly Val Ala Thr Ala Pro Gln Gln Val Leu Ser Asn Gly
850 855 860

Val Pro Val Ser Asn Phe Thr Tyr Ser Pro Asp Thr Lys Val Leu Asp
865 870 875 880

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895

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Gly Ala Gln Met Gly Gln Pro Trp Cys Phe Phe Pro Pro Ser Tyr Pro
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Ser Tyr Lys Leu Glu Asn Leu Ser Ser Ser Glu Met Gly Tyr Thr Ala
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Thr Leu Thr Arg Thr Thr Pro Thr Phe Phe Pro Lys Asp Ile Leu Thr
 85 90 95

Leu Arg Leu Asp Val Met Met Glu Thr Glu Asn Arg Leu His Phe Thr
 100 105 110

Ile Lys Asp Pro Ala Asn Arg Arg Tyr Glu Val Pro Leu Glu Thr Pro
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His Val His Ser Arg Ala Pro Ser Pro Leu Tyr Ser Val Glu Phe Ser
 130 135 140

Glu Glu Pro Phe Gly Val Ile Val Arg Arg Gln Leu Asp Gly Arg Val
 145 150 155 160

Leu Leu Asn Thr Thr Val Ala Pro Leu Phe Phe Ala Asp Gln Phe Leu
 165 170 175

Gln Leu Ser Thr Ser Leu Pro Ser Gln Tyr Ile Thr Gly Leu Ala Glu
 180 185 190

His Leu Ser Pro Leu Met Leu Ser Thr Ser Trp Thr Arg Ile Thr Leu
 195 200 205

Trp Asn Arg Asp Leu Ala Pro Thr Pro Gly Ala Asn Leu Tyr Gly Ser
 210 215 220

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

Phe Leu Leu Asn Ser Asn Ala Met Asp Val Val Leu Gln Pro Ser Pro
 245 250 255

Ala Leu Ser Trp Arg Ser Thr Gly Gly Ile Leu Asp Val Tyr Ile Phe
 260 265 270

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

Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly Leu Gly Phe His Leu Cys
 290 295 300

Arg Trp Gly Tyr Ser Ser Thr Ala Ile Thr Arg Gln Val Val Glu Asn
 305 310 315 320

Met Thr Arg Ala His Phe Pro Leu Asp Val Gln Trp Asn Asp Leu Asp
 325 330 335

Tyr Met Asp Ser Arg Arg Asp Phe Thr Phe Asn Lys Asp Gly Phe Arg

340

345

350

Asp Phe Pro Ala Met Val Gln Glu Leu His Gln Gly Gly Arg Arg Tyr
 355 360 365

Met Met Ile Val Asp Pro Ala Ile Ser Ser Ser Gly Pro Ala Gly Ser
 370 375 380

Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg Gly Val Phe Ile Thr Asn
 385 390 395 400

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

Phe Pro Asp Phe Thr Asn Pro Thr Ala Leu Ala Trp Trp Glu Asp Met
 420 425 430

Val Ala Glu Phe His Asp Gln Val Pro Phe Asp Gly Met Trp Ile Asp
 435 440 445

Met Asn Glu Pro Ser Asn Phe Ile Arg Gly Ser Glu Asp Gly Cys Pro
 450 455 460

Asn Asn Glu Leu Glu Asn Pro Pro Tyr Val Pro Gly Val Val Gly Gly
 465 470 475 480

Thr Leu Gln Ala Ala Thr Ile Cys Ala Ser Ser His Gln Phe Leu Ser
 485 490 495

Thr His Tyr Asn Leu His Asn Leu Tyr Gly Leu Thr Glu Ala Ile Ala
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Ser His Arg Ala Leu Val Lys Ala Arg Gly Thr Arg Pro Phe Val Ile
 515 520 525

Ser Arg Ser Thr Phe Ala Gly His Gly Arg Tyr Ala Gly His Trp Thr
 530 535 540

Gly Asp Val Trp Ser Ser Trp Glu Gln Leu Ala Ser Ser Val Pro Glu
 545 550 555 560

Ile Leu Gln Phe Asn Leu Leu Gly Val Pro Leu Val Gly Ala Asp Val
 565 570 575

Cys Gly Phe Leu Gly Asn Thr Ser Glu Glu Leu Cys Val Arg Trp Thr
 580 585 590

Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg Asn His Asn Ser Leu Leu
 595 600 605

Ser Leu Pro Gln Glu Pro Tyr Ser Phe Ser Glu Pro Ala Gln Gln Ala
 610 615 620

Met Arg Lys Ala Leu Thr Leu Arg Tyr Ala Leu Leu Pro His Leu Tyr
 625 630 635 640

Thr Leu Phe His Gln Ala His Val Ala Gly Glu Thr Val Ala Arg Pro
 645 650 655

Leu Phe Leu Glu Phe Pro Lys Asp Ser Ser Thr Trp Thr Val Asp His
 660 665 670

Gln Leu Leu Trp Gly Glu Ala Leu Leu Ile Thr Pro Val Leu Gln Ala
 675 680 685

Gly Lys Ala Glu Val Thr Gly Tyr Phe Pro Leu Gly Thr Trp Tyr Asp
 690 695 700

Leu Gln Thr Val Pro Val Glu Ala Leu Gly Ser Leu Pro Pro Pro Pro
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Ala Ala Pro Arg Glu Pro Ala Ile His Ser Glu Gly Gln Trp Val Thr
 725 730 735

Leu Pro Ala Pro Leu Asp Thr Ile Asn Val His Leu Arg Ala Gly Tyr
740 745 750

Ile Ile Pro Leu Gln Gly Pro Gly Leu Thr Thr Thr Glu Ser Arg Gln
755 760 765

Gln Pro Met Ala Leu Ala Val Ala Leu Thr Lys Gly Gly Glu Ala Arg
770 775 780

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

Gly Ala Tyr Thr Gln Val Ile Phe Leu Ala Arg Asn Asn Thr Ile Val
805 810 815

Asn Glu Leu Val Arg Val Thr Ser Glu Gly Ala Gly Leu Gln Leu Gln
820 825 830

Lys Val Thr Val Leu Gly Val Ala Thr Ala Pro Gln Gln Val Leu Ser
835 840 845

Asn Gly Val Pro Val Ser Asn Phe Thr Tyr Ser Pro Asp Thr Lys Val
850 855 860

Leu Asp Ile Cys Val Ser Leu Leu Met Gly Glu Gln Phe Leu Val Ser
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Trp Cys

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Gly Cys Cys Tyr Ile Pro Ala Lys Gln Gly Leu Gln Gly Ala Gln Met
 35 40 45

Gly Gln Pro Trp Cys Phe Phe Pro Pro Ser Tyr Pro Ser Tyr Lys Leu
 50 55 60

Glu Asn Leu Ser Ser Ser Glu Met Gly Tyr Thr Ala Thr Leu Thr Arg
 65 70 75 80

Thr Thr Pro Thr Phe Phe Pro Lys Asp Ile Leu Thr Leu Arg Leu Asp
 85 90 95

Val Met Met Glu Thr Glu Asn Arg Leu His Phe Thr Ile Lys Asp Pro
 100 105 110

Ala Asn Arg Arg Tyr Glu Val Pro Leu Glu Thr Pro His Val His Ser
 115 120 125

Arg Ala Pro Ser Pro Leu Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe
 130 135 140

Gly Val Ile Val Arg Arg Gln Leu Asp Gly Arg Val Leu Leu Asn Thr
 145 150 155 160

Thr Val Ala Pro Leu Phe Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr
 165 170 175

Ser Leu Pro Ser Gln Tyr Ile Thr Gly Leu Ala Glu His Leu Ser Pro
 180 185 190

Leu Met Leu Ser Thr Ser Trp Thr Arg Ile Thr Leu Trp Asn Arg Asp
 195 200 205

Leu Ala Pro Thr Pro Gly Ala Asn Leu Tyr Gly Ser His Pro Phe Tyr
 210 215 220

Leu Ala Leu Glu Asp Gly Gly Ser Ala His Gly Val Phe Leu Leu Asn
 225 230 235 240

Ser Asn Ala Met Asp Val Val Leu Gln Pro Ser Pro Ala Leu Ser Trp
 245 250 255

Arg Ser Thr Gly Gly Ile Leu Asp Val Tyr Ile Phe Leu Gly Pro Glu
 260 265 270

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

Met Pro Pro Tyr Trp Gly Leu Gly Phe His Leu Cys Arg Trp Gly Tyr
 290 295 300

Ser Ser Thr Ala Ile Thr Arg Gln Val Val Glu Asn Met Thr Arg Ala
 305 310 315 320

His Phe Pro Leu Asp Val Gln Trp Asn Asp Leu Asp Tyr Met Asp Ser
 325 330 335

Arg Arg Asp Phe Thr Phe Asn Lys Asp Gly Phe Arg Asp Phe Pro Ala
 340 345 350

Met Val Gln Glu Leu His Gln Gly Gly Arg Arg Tyr Met Met Ile Val
 355 360 365

Asp Pro Ala Ile Ser Ser Ser Gly Pro Ala Gly Ser Tyr Arg Pro Tyr
 370 375 380

Asp Glu Gly Leu Arg Arg Gly Val Phe Ile Thr Asn Glu Thr Gly Gln
 385 390 395 400

Pro Leu Ile Gly Lys Val Trp Pro Gly Ser Thr Ala Phe Pro Asp Phe
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Thr Asn Pro Thr Ala Leu Ala Trp Trp Glu Asp Met Val Ala Glu Phe
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His Asp Gln Val Pro Phe Asp Gly Met Trp Ile Asp Met Asn Glu Pro
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Ser Asn Phe Ile Arg Gly Ser Glu Asp Gly Cys Pro Asn Asn Glu Leu
 450 455 460

Glu Asn Pro Pro Tyr Val Pro Gly Val Val Gly Gly Thr Leu Gln Ala
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Ala Thr Ile Cys Ala Ser Ser His Gln Phe Leu Ser Thr His Tyr Asn
 485 490 495

Leu His Asn Leu Tyr Gly Leu Thr Glu Ala Ile Ala Ser His Arg Ala
 500 505 510

Leu Val Lys Ala Arg Gly Thr Arg Pro Phe Val Ile Ser Arg Ser Thr
 515 520 525

Phe Ala Gly His Gly Arg Tyr Ala Gly His Trp Thr Gly Asp Val Trp
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Ser Ser Trp Glu Gln Leu Ala Ser Ser Val Pro Glu Ile Leu Gln Phe
 545 550 555 560

Asn Leu Leu Gly Val Pro Leu Val Gly Ala Asp Val Cys Gly Phe Leu
 565 570 575

Gly Asn Thr Ser Glu Glu Leu Cys Val Arg Trp Thr Gln Leu Gly Ala

580

585

590

Phe Tyr Pro Phe Met Arg Asn His Asn Ser Leu Leu Ser Leu Pro Gln
 595 600 605

Glu Pro Tyr Ser Phe Ser Glu Pro Ala Gln Gln Ala Met Arg Lys Ala
 610 615 620

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

Gln Ala His Val Ala Gly Glu Thr Val Ala Arg Pro Leu Phe Leu Glu
 645 650 655

Phe Pro Lys Asp Ser Ser Thr Trp Thr Val Asp His Gln Leu Leu Trp
 660 665 670

Gly Glu Ala Leu Leu Ile Thr Pro Val Leu Gln Ala Gly Lys Ala Glu
 675 680 685

Val Thr Gly Tyr Phe Pro Leu Gly Thr Trp Tyr Asp Leu Gln Thr Val
 690 695 700

Pro Val Glu Ala Leu Gly Ser Leu Pro Pro Pro Pro Ala Ala Pro Arg
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Glu Pro Ala Ile His Ser Glu Gly Gln Trp Val Thr Leu Pro Ala Pro
 725 730 735

Leu Asp Thr Ile Asn Val His Leu Arg Ala Gly Tyr Ile Ile Pro Leu
 740 745 750

Gln Gly Pro Gly Leu Thr Thr Thr Glu Ser Arg Gln Gln Pro Met Ala
 755 760 765

Leu Ala Val Ala Leu Thr Lys Gly Gly Glu Ala Arg Gly Glu Leu Phe
 770 775 780

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

Gln Val Ile Phe Leu Ala Arg Asn Asn Thr Ile Val Asn Glu Leu Val
805 810 815

Arg Val Thr Ser Glu Gly Ala Gly Leu Gln Leu Gln Lys Val Thr Val
820 825 830

Leu Gly Val Ala Thr Ala Pro Gln Gln Val Leu Ser Asn Gly Val Pro
835 840 845

Val Ser Asn Phe Thr Tyr Ser Pro Asp Thr Lys Val Leu Asp Ile Cys
850 855 860

Val Ser Leu Leu Met Gly Glu Gln Phe Leu Val Ser Trp Cys
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