

52284 K\_ST25  
SEQUENCE LISTING

<110> PAION Deutschland GmbH  
Nesheim, Michael E.  
Foley, Jonathan  
Petersen, Karl-Uwe

<120> Treatment of coagulopathy with hyperfibrinolysis

<130> 52284 K

<160> 11

<170> PatentIn version 3.5

<210> 1

<211> 557

<212> PRT

<213> Homo sapiens

<220>

<221> Protein

<222> (1)..(557)

<223> Native human mature thrombomodulin

<400> 1

Ala Pro Ala Glu Pro Gln Pro Gly Gly Ser Gln Cys Val Glu His Asp  
1 5 10 15

Cys Phe Ala Leu Tyr Pro Gly Pro Ala Thr Phe Leu Asn Ala Ser Gln  
20 25 30

52284 K<sub>ST25</sub>

Ile Cys Asp Gly Leu Arg Gly His Leu Met Thr Val Arg Ser Ser Val  
 35 40 45

Ala Ala Asp Val Ile Ser Leu Leu Leu Asn Gly Asp Gly Gly Val Gly  
 50 55 60

Arg Arg Arg Leu Trp Ile Gly Leu Gln Leu Pro Pro Gly Cys Gly Asp  
 65 70 75 80

Pro Lys Arg Leu Gly Pro Leu Arg Gly Phe Gln Trp Val Thr Gly Asp  
 85 90 95

Asn Asn Thr Ser Tyr Ser Arg Trp Ala Arg Leu Asp Leu Asn Gly Ala  
 100 105 110

Pro Leu Cys Gly Pro Leu Cys Val Ala Val Ser Ala Ala Glu Ala Thr  
 115 120 125

Val Pro Ser Glu Pro Ile Trp Glu Glu Gln Gln Cys Glu Val Lys Ala  
 130 135 140

Asp Gly Phe Leu Cys Glu Phe His Phe Pro Ala Thr Cys Arg Pro Leu  
 145 150 155 160

## 52284 K\_ST25

Ala Val Glu Pro Gly Ala Ala Ala Ala Val Ser Ile Thr Tyr Gly  
 165 170 175

Thr Pro Phe Ala Ala Arg Gly Ala Asp Phe Gln Ala Leu Pro Val Gly  
 180 185 190

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

Pro Pro Gly Ala Val Gln Gly His Trp Ala Arg Glu Ala Pro Gly Ala  
 210 215 220

Trp Asp Cys Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala  
 225 230 235 240

Ile Pro Gly Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln  
 245 250 255

Ala Asp Gly Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp  
 260 265 270

Leu Cys Glu His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr  
 275 280 285

Ser Cys Met Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg  
 290 295 300

52284 K\_ST25

Cys Glu Asp Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln  
305 310 315 320

Arg Cys Val Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn  
325 330 335

Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe  
340 345 350

Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr  
355 360 365

Leu Cys Val Cys Ala Glu Gly Phe Ala Pro Ile Pro His Glu Pro His  
370 375 380

Arg Cys Gln Met Phe Cys Asn Gln Thr Ala Cys Pro Ala Asp Cys Asp  
385 390 395 400

Pro Asn Thr Gln Ala Ser Cys Glu Cys Pro Glu Gly Tyr Ile Leu Asp  
405 410 415

Asp Gly Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe  
420 425 430

52284 K<sub>ST25</sub>

cys ser gly val cys his asn leu pro gly thr phe glu cys ile cys  
 435 440 445

gly pro asp ser ala leu ala arg his ile gly thr asp cys asp ser  
 450 455 460

gly lys val asp gly gly asp ser gly ser gly glu pro pro pro ser  
 465 470 475 480

pro thr pro gly ser thr leu thr pro pro ala val gly leu val his  
 485 490 495

ser gly leu leu ile gly ile ser ile ala ser leu cys leu val val  
 500 505 510

ala leu leu ala leu leu cys his leu arg lys lys gln gly ala ala  
 515 520 525

arg ala lys met glu tyr lys cys ala ala pro ser lys glu val val  
 530 535 540

leu gln his val arg thr glu arg thr pro gln arg leu  
 545 550 555

<210> 2

<211> 487

52284 K<sub>ST</sub>25

<212> PRT

<213> Homo sapiens

<220>

<221> Protein

<222> (1)..(487)

<223> solulin (human soluble thrombomodulin analogue)

<400> 2

Glu Pro Gln Pro Gly Gly Ser Gln Cys Val Glu His Asp Cys Phe Ala  
1 5 10 15

Leu Tyr Pro Gly Pro Ala Thr Phe Leu Asn Ala Ser Gln Ile Cys Asp  
20 25 30

Gly Leu Arg Gly His Leu Met Thr Val Arg Ser Ser Val Ala Ala Asp  
35 40 45

Val Ile Ser Leu Leu Leu Asn Gly Asp Gly Gly Val Gly Arg Arg Arg  
50 55 60

Leu Trp Ile Gly Leu Gln Leu Pro Pro Gly Cys Gly Asp Pro Lys Arg  
65 70 75 80

Leu Gly Pro Leu Arg Gly Phe Gln Trp Val Thr Gly Asp Asn Asn Thr  
85 90 95

52284 K<sub>ST</sub>25

Ser Tyr Ser Arg Trp Ala Arg Leu Asp Leu Asn Gly Ala Pro Leu Cys  
 100 105 110

Gly Pro Leu Cys Val Ala Val Ser Ala Ala Glu Ala Thr Val Pro Ser  
 115 120 125

Glu Pro Ile Trp Glu Glu Gln Gln Cys Glu Val Lys Ala Asp Gly Phe  
 130 135 140

Leu Cys Glu Phe His Phe Pro Ala Thr Cys Arg Pro Leu Ala Val Glu  
 145 150 155 160

Pro Gly Ala Ala Ala Ala Ala Val Ser Ile Thr Tyr Gly Thr Pro Phe  
 165 170 175

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

Ala Val Ala Pro Leu Gly Leu Gln Leu Met Cys Thr Ala Pro Pro Gly  
 195 200 205

Ala Val Gln Gly His Trp Ala Arg Glu Ala Pro Gly Ala Trp Asp Cys  
 210 215 220

Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala Ile Pro Gly

225 230 52284 K-ST25 235 240

Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln Ala Asp Gly  
245 250 255

Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp Leu Cys Glu  
260 265 270

His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr Ser Cys Met  
275 280 285

Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg Cys Glu Asp  
290 295 300

Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln Arg Cys Val  
305 310 315 320

Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn Tyr Asp Leu  
325 330 335

Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe Arg Ala Asn  
340 345 350

Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr Leu Cys Val  
355 360 365



52284 K<sub>ST</sub>25

Cys Ala Glu Gly Phe Ala Pro Ile Pro His Glu Pro His Arg Cys Gln  
 370 375 380

Leu Phe Cys Asn Gln Thr Ala Cys Pro Ala Asp Cys Asp Pro Asn Thr  
 385 390 395 400

Gln Ala Ser Cys Glu Cys Pro Glu Gly Tyr Ile Leu Asp Asp Gly Phe  
 405 410 415

Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe Cys Ser Gly  
 420 425 430

Val Cys His Asn Leu Pro Gly Thr Phe Glu Cys Ile Cys Gly Pro Asp  
 435 440 445

Ser Ala Leu Ala Gly Gln Ile Gly Thr Asp Cys Asp Ser Gly Lys Val  
 450 455 460

Asp Gly Gly Asp Ser Gly Ala Gly Glu Pro Pro Pro Ser Pro Thr Pro  
 465 470 475 480

Gly Ser Thr Leu Thr Pro Pro  
 485

<210> 3

52284 K\_ST25

<211> 462

<212> PRT

<213> Homo sapiens

<220>

<221> Protein

<222> (1)..(462)

<223> Human soluble thrombomodulin analogue (SEQ ID NO:1 of W093/25675)

<400> 3

Ala Pro Ala Glu Pro Gln Pro Gly Gly Ser Gln Cys Val Glu His Asp  
1 5 10 15

Cys Phe Ala Leu Tyr Pro Gly Pro Ala Thr Phe Leu Asn Ala Ser Gln  
20 25 30

Ile Cys Asp Gly Leu Arg Gly His Leu Met Thr Val Arg Ser Ser Val  
35 40 45

Ala Ala Asp Val Ile Ser Leu Leu Leu Asn Gly Asp Gly Gly Val Gly  
50 55 60

Arg Arg Arg Leu Trp Ile Gly Leu Gln Leu Pro Pro Gly Cys Gly Asp  
65 70 75 80

Pro Lys Arg Leu Gly Pro Leu Arg Gly Phe Gln Trp Val Thr Gly Asp  
85 90 95

52284 K\_ST25

Asn Asn Thr Ser Tyr Ser Arg Trp Ala Arg Leu Asp Leu Asn Gly Ala  
 100 105 110

Pro Leu Cys Gly Pro Leu Cys Val Ala Val Ser Ala Ala Glu Ala Thr  
 115 120 125

Val Pro Ser Glu Pro Ile Trp Glu Glu Gln Gln Cys Glu Val Lys Ala  
 130 135 140

Asp Gly Phe Leu Cys Glu Phe His Phe Pro Ala Thr Cys Arg Pro Leu  
 145 150 155 160

Ala Val Glu Pro Gly Ala Ala Ala Ala Ala Val Ser Ile Thr Tyr Gly  
 165 170 175

Thr Pro Phe Ala Ala Arg Gly Ala Asp Phe Gln Ala Leu Pro Val Gly  
 180 185 190

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

Pro Pro Gly Ala Val Gln Gly His Trp Ala Arg Glu Ala Pro Gly Ala  
 210 215 220

52284 K\_ST25  
 Trp Asp Cys Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala  
 225 230 235 240

Ile Pro Gly Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln  
 245 250 255

Ala Asp Gly Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp  
 260 265 270

Leu Cys Glu His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr  
 275 280 285

Ser Cys Met Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg  
 290 295 300

Cys Glu Asp Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln  
 305 310 315 320

Arg Cys Val Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn  
 325 330 335

Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe  
 340 345 350

Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr  
 355 360 365

52284 K\_ST25

Leu Cys Val Cys Ala Glu Gly Phe Ala Pro Ile Pro His Glu Pro His  
 370 375 380

Arg Cys Gln Met Phe Cys Asn Gln Thr Ala Cys Pro Ala Asp Cys Asp  
 385 390 395 400

Pro Asn Thr Gln Ala Ser Cys Glu Cys Pro Glu Gly Tyr Ile Leu Asp  
 405 410 415

Asp Gly Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe  
 420 425 430

Cys Ser Gly Val Cys His Asn Leu Pro Gly Thr Phe Glu Cys Ile Cys  
 435 440 445

Gly Pro Asp Ser Ala Leu Ala Arg His Ile Gly Thr Asp Cys  
 450 455 460

<210> 4

<211> 498

<212> PRT

<213> Homo sapiens

<220>

<221> Protein

<222> (1)..(498)

&lt;223&gt; ART-123 (human soluble thrombomodulin analogue)

&lt;400&gt; 4

Ala Pro Ala Glu Pro Gln Pro Gly Gly Ser Gln Cys Val Glu His Asp  
 1 5 10 15

Cys Phe Ala Leu Tyr Pro Gly Pro Ala Thr Phe Leu Asn Ala Ser Gln  
 20 25 30

Ile Cys Asp Gly Leu Arg Gly His Leu Met Thr Val Arg Ser Ser Val  
 35 40 45

Ala Ala Asp Val Ile Ser Leu Leu Leu Asn Gly Asp Gly Gly Val Gly  
 50 55 60

Arg Arg Arg Leu Trp Ile Gly Leu Gln Leu Pro Pro Gly Cys Gly Asp  
 65 70 75 80

Pro Lys Arg Leu Gly Pro Leu Arg Gly Phe Gln Trp Val Thr Gly Asp  
 85 90 95

Asn Asn Thr Ser Tyr Ser Arg Trp Ala Arg Leu Asp Leu Asn Gly Ala  
 100 105 110

Pro Leu Cys Gly Pro Leu Cys Val Ala Val Ser Ala Ala Glu Ala Thr  
 115 120 125

52284 K\_ST25

Val Pro Ser Glu Pro Ile Trp Glu Glu Gln Gln Cys Glu Val Lys Ala  
 130 135 140

Asp Gly Phe Leu Cys Glu Phe His Phe Pro Ala Thr Cys Arg Pro Leu  
 145 150 155 160

Ala Val Glu Pro Gly Ala Ala Ala Ala Ala Val Ser Ile Thr Tyr Gly  
 165 170 175

Thr Pro Phe Ala Ala Arg Gly Ala Asp Phe Gln Ala Leu Pro Val Gly  
 180 185 190

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

Pro Pro Gly Ala Val Gln Gly His Trp Ala Arg Glu Ala Pro Gly Ala  
 210 215 220

Trp Asp Cys Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala  
 225 230 235 240

Ile Pro Gly Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln  
 245 250 255

## 52284 K\_ST25

Ala Asp Gly Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp  
 260 265 270

Leu Cys Glu His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr  
 275 280 285

Ser Cys Met Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg  
 290 295 300

Cys Glu Asp Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln  
 305 310 315 320

Arg Cys Val Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn  
 325 330 335

Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe  
 340 345 350

Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr  
 355 360 365

Leu Cys Val Cys Ala Glu Gly Phe Ala Pro Ile Pro His Glu Pro His  
 370 375 380

Arg Cys Gln Met Phe Cys Asn Gln Thr Ala Cys Pro Ala Asp Cys Asp  
 385 390 395 400



52284 K\_ST25

Pro Asn Thr Gln Ala Ser Cys Glu Cys Pro Glu Gly Tyr Ile Leu Asp  
 405 410 415

Asp Gly Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe  
 420 425 430

Cys Ser Gly Val Cys His Asn Leu Pro Gly Thr Phe Glu Cys Ile Cys  
 435 440 445

Gly Pro Asp Ser Ala Leu Val Arg His Ile Gly Thr Asp Cys Asp Ser  
 450 455 460

Gly Lys Val Asp Gly Gly Asp Ser Gly Ser Gly Glu Pro Pro Pro Ser  
 465 470 475 480

Pro Thr Pro Gly Ser Thr Leu Thr Pro Pro Ala Val Gly Leu Val His  
 485 490 495

Ser Gly

<210> 5

<211> 487

<212> PRT

<213> synthetic sequence

<400> 5

52284 K\_ST25

Glu Pro Gln Pro Gly Gly Ser Gln Cys Val Glu His Asp Cys Phe Ala  
1 5 10 15

Leu Tyr Pro Gly Pro Ala Thr Phe Leu Asn Ala Ser Gln Ile Cys Asp  
20 25 30

Gly Leu Arg Gly His Leu Met Thr Val Arg Ser Ser Val Ala Ala Asp  
35 40 45

Val Ile Ser Leu Leu Leu Asn Gly Asp Gly Gly Val Gly Arg Arg Arg  
50 55 60

Leu Trp Ile Gly Leu Gln Leu Pro Pro Gly Cys Gly Asp Pro Lys Arg  
65 70 75 80

Leu Gly Pro Leu Arg Gly Phe Gln Trp Val Thr Gly Asp Asn Asn Thr  
85 90 95

Ser Tyr Ser Arg Trp Ala Arg Leu Asp Leu Asn Gly Ala Pro Leu Cys  
100 105 110

Gly Pro Leu Cys Val Ala Val Ser Ala Ala Glu Ala Thr Val Pro Ser  
115 120 125

Glu Pro Ile Trp Glu Glu Gln Gln Cys Glu Val Lys Ala Asp Gly Phe

130

135

Leu Cys Glu Phe His Phe Pro Ala Thr Cys Arg Pro Leu Ala Val Glu  
145 150 155 160

Pro Gly Ala Ala Ala Ala Ala Val Ser Ile Thr Tyr Gly Thr Pro Phe  
165 170 175

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

Ala Val Ala Pro Leu Gly Leu Gln Leu Met Cys Thr Ala Pro Pro Gly  
195 200 205

Ala Val Gln Gly His Trp Ala Arg Glu Ala Pro Gly Ala Trp Asp Cys  
210 215 220

Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala Ile Pro Gly  
225 230 235 240

Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln Ala Asp Gly  
245 250 255

Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp Leu Cys Glu  
260 265 270

52284 K\_ST25

His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr Ser Cys Met  
 275 280 285

Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg Cys Glu Asp  
 290 295 300

Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln Arg Cys Val  
 305 310 315 320

Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn Tyr Asp Leu  
 325 330 335

Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe Arg Ala Asn  
 340 345 350

Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr Leu Cys Val  
 355 360 365

Cys Ala Glu Gly Ala Ala Pro Ile Pro His Glu Pro His Arg Cys Gln  
 370 375 380

Leu Phe Cys Asn Gln Thr Ala Cys Pro Ala Asp Cys Asp Pro Asn Thr  
 385 390 395 400

Gln Ala Ser Cys Glu Cys Pro Glu Gly Tyr Ile Leu Asp Asp Gly Phe

405 52284 K<sub>ST</sub>25 415  
410

Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe Cys Ser Gly  
420 425 430

Val Cys His Asn Leu Pro Gly Thr Phe Glu Cys Ile Cys Gly Pro Asp  
435 440 445

Ser Ala Leu Ala Gly Gln Ile Gly Thr Asp Cys Asp Ser Gly Lys Val  
450 455 460

Asp Gly Gly Asp Ser Gly Ala Gly Glu Pro Pro Pro Ser Pro Thr Pro  
465 470 475 480

Gly Ser Thr Leu Thr Pro Pro  
485

<210> 6

<211> 236

<212> PRT

<213> synthetic sequence

<400> 6

Cys Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala Ile Pro  
1 5 10 15

## 52284 K\_ST25

Gly Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln Ala Asp  
 20 25 30

Gly Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp Leu Cys  
 35 40 45

Glu His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr Ser Cys  
 50 55 60

Met Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg Cys Glu  
 65 70 75 80

Asp Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln Arg Cys  
 85 90 95

Val Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn Tyr Asp  
 100 105 110

Leu Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe Arg Ala  
 115 120 125

Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr Leu Cys  
 130 135 140

Val Cys Ala Glu Gly Ala Ala Pro Ile Pro His Glu Pro His Arg Cys  
 145 150 155 160

52284 K\_ST25

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

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

Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe Cys Ser  
 195 200 205

Gly Val Cys His Asn Leu Pro Gly Thr Phe Glu Cys Ile Cys Gly Pro  
 210 215 220

Asp Ser Ala Leu Ala Gly Gln Ile Gly Thr Asp Cys  
 225 230 235

<210> 7

<211> 130

<212> PRT

<213> synthetic sequence

<400> 7

Cys Tyr Pro Asn Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val  
 1 5 10 15

Asp Pro Cys Phe Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn

20 25 52284 K\_ST25 30

Gln Thr Ser Tyr Leu Cys Val Cys Ala Glu Gly Ala Ala Pro Ile Pro  
35 40 45

His Glu Pro His Arg Cys Gln Leu Phe Cys Asn Gln Thr Ala Cys Pro  
50 55 60

Ala Asp Cys Asp Pro Asn Thr Gln Ala Ser Cys Glu Cys Pro Glu Gly  
65 70 75 80

Tyr Ile Leu Asp Asp Gly Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu  
85 90 95

Asn Gly Gly Phe Cys Ser Gly Val Cys His Asn Leu Pro Gly Thr Phe  
100 105 110

Glu Cys Ile Cys Gly Pro Asp Ser Ala Leu Ala Gly Gln Ile Gly Thr  
115 120 125

Asp Cys  
130

<210> 8

<211> 236

<212> PRT



&lt;213&gt; synthetic sequence

&lt;400&gt; 8

Cys Ser Val Glu Asn Gly Gly Cys Glu His Ala Cys Asn Ala Ile Pro  
 1 5 10 15

Gly Ala Pro Arg Cys Gln Cys Pro Ala Gly Ala Ala Leu Gln Ala Asp  
 20 25 30

Gly Arg Ser Cys Thr Ala Ser Ala Thr Gln Ser Cys Asn Asp Leu Cys  
 35 40 45

Glu His Phe Cys Val Pro Asn Pro Asp Gln Pro Gly Ser Tyr Ser Cys  
 50 55 60

Met Cys Glu Thr Gly Tyr Arg Leu Ala Ala Asp Gln His Arg Cys Glu  
 65 70 75 80

Asp Val Asp Asp Cys Ile Leu Glu Pro Ser Pro Cys Pro Gln Arg Cys  
 85 90 95

Val Asn Thr Gln Gly Gly Phe Glu Cys His Cys Tyr Pro Asn Tyr Asp  
 100 105 110

Leu Val Asp Gly Glu Cys Val Glu Pro Val Asp Pro Cys Phe Arg Ala  
 115 120 125

52284 K\_ST25

Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln Thr Ser Tyr Leu Cys  
 130 135 140

Val Cys Ala Glu Gly Ala Ala Pro Ile Pro His Glu Pro His Arg Cys  
 145 150 155 160

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

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

Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn Gly Gly Phe Cys Ser  
 195 200 205

Gly Val Cys His Asn Leu Pro Gly Thr Phe Glu Cys Ile Cys Gly Pro  
 210 215 220

Asp Ser Ala Leu Ala Arg His Ile Gly Thr Asp Cys  
 225 230 235

<210> 9

<211> 130

<212> PRT

<213> synthetic sequence

52284 K\_ST25

<400> 9

Cys Tyr Pro Asn Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val  
1 5 10 15

Asp Pro Cys Phe Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn  
20 25 30

Gln Thr Ser Tyr Leu Cys Val Cys Ala Glu Gly Phe Ala Pro Ile Pro  
35 40 45

His Glu Pro His Arg Cys Gln Ala Phe Cys Asn Gln Thr Ala Cys Pro  
50 55 60

Ala Asp Cys Asp Pro Asn Thr Gln Ala Ser Cys Glu Cys Pro Glu Gly  
65 70 75 80

Tyr Ile Leu Asp Asp Gly Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu  
85 90 95

Asn Gly Gly Phe Cys Ser Gly Val Cys His Asn Leu Pro Gly Thr Phe  
100 105 110

Glu Cys Ile Cys Gly Pro Asp Ser Ala Leu Ala Gly Gln Ile Gly Thr  
115 120 125

52284 K\_ST25

Asp Cys

130

<210> 10

<211> 129

<212> PRT

<213> synthetic sequence

<400> 10

Tyr Pro Asn Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val Asp  
1 5 10 15

Pro Cys Phe Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn Gln  
20 25 30

Thr Ser Tyr Leu Cys Val Cys Ala Glu Gly Phe Ala Pro Ile Pro His  
35 40 45

Glu Pro His Arg Cys Gln Leu Phe Cys Asn Gln Thr Ala Cys Pro Ala  
50 55 60

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

Ile Leu Asp Asp Gly Phe Ile Cys Thr Asp Ile Asp Glu Cys Glu Asn  
85 90 95

52284 K\_ST25

Gly Gly Phe Cys Ser Gly Val Cys His Asn Leu Pro Gly Thr Phe Glu  
 100 105 110

Cys Ile Cys Gly Pro Asp Ser Ala Leu Ala Gly Gln Ile Gly Thr Ala  
 115 120 125

Cys

<210> 11

<211> 130

<212> PRT

<213> synthetic sequence

<400> 11

Cys Tyr Pro Asn Tyr Asp Leu Val Asp Gly Glu Cys Val Glu Pro Val  
 1 5 10 15

Asp Pro Cys Phe Arg Ala Asn Cys Glu Tyr Gln Cys Gln Pro Leu Asn  
 20 25 30

Gln Thr Ser Tyr Leu Cys Val Cys Ala Glu Gly Ala Ala Pro Ile Pro  
 35 40 45

His Glu Pro His Arg Cys Gln Ala Phe Cys Asn Gln Thr Ala Cys Pro

52284 K\_ST25  
60

80

95

110

125

130