

# SEQUENCE LISTING

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Bux, Juergen  
Reil, Angelika

<120> SCREENING METHODS FOR TRANSFUSION RELATED ACUTE LUNG INJURY  
(TRALI)

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<151> 2008-09-04

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Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp Pro Arg Lys Val Ile  
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His Ser Trp Lys Asn Thr Ala Leu His Lys Val Thr Tyr Leu Gln Asn  
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Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys Asn Thr Ser  
 35 40 45

Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met Leu Ile Glu Ser  
 50 55 60

Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly Cys Thr Glu Ala Lys  
 65 70 75 80

Asp Gln Glu Pro Arg Val Thr Glu His Arg Met Gly Pro Gly Leu Ser  
 85 90 95

Leu Ile Ser Tyr Thr Phe Val Cys Arg Gln Glu Asp Phe Cys Asn Asn  
 100 105 110

Leu Val Asn Ser Leu Pro Leu Trp Ala Pro Gln Pro Pro Ala Asp Pro  
 115 120 125

Gly Ser Leu Arg Cys Pro Val Cys Leu Ser Met Glu Gly Cys Leu Glu  
 130 135 140

Gly Thr Thr Glu Glu Ile Cys Pro Lys Gly Thr Thr His Cys Tyr Asp  
 145 150 155 160

Gly Leu Leu Arg Leu Arg Gly Gly Gly Ile Phe Ser Asn Leu Arg Val  
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Gln Gly Cys Met Pro Gln Pro Val Cys Asn Leu Leu Asn Gly Thr Gln  
 180 185 190

Glu Ile Gly Pro Val Gly Met Thr Glu Asn Cys Asp Met Lys Asp Phe  
 195 200 205

Leu Thr Cys His Arg Gly Thr Thr Ile Met Thr His Gly Asn Leu Ala  
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Gln Glu Pro Thr Asp Trp Thr Thr Ser Asn Thr Glu Met Cys Glu Val  
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Gly Gln Val Cys Gln Glu Thr Leu Leu Leu Leu Asp Val Gly Leu Thr  
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Ser Thr Leu Val Gly Thr Lys Gly Cys Ser Thr Val Gly Ala Gln Asn  
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Ser Gln Lys Thr Thr Ile His Ser Ala Pro Pro Gly Val Leu Val Ala  
275 280 285

Ser Tyr Thr His Phe Cys Ser Ser Asp Leu Cys Asn Ser Ala Ser Ser  
290 295 300

Ser Ser Val Leu Leu Asn Ser Leu Pro Pro Gln Ala Ala Pro Val Pro  
305 310 315 320

Gly Asp Arg Gln Cys Pro Thr Cys Val Gln Pro Leu Gly Thr Cys Ser  
325 330 335

Ser Gly Ser Pro Arg Met Thr Cys Pro Arg Gly Ala Thr His Cys Tyr  
340 345 350

Asp Gly Tyr Ile His Leu Ser Gly Gly Gly Leu Ser Thr Lys Met Ser  
355 360 365

Ile Gln Gly Cys Val Ala Gln Pro Ser Ser Phe Leu Leu Asn His Thr  
370 375 380

Arg Gln Ile Gly Ile Phe Ser Ala Arg Glu Lys Arg Asp Val Gln Pro  
385 390 395 400

Pro Ala Ser Gln His Glu Gly Gly Gly Ala Glu Gly Leu Glu Ser Leu  
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Val Cys Pro Ser Cys  
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<213> Homo sapiens

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20          25          30

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Gly Phe Gly Gln Ser Val Val Gln Leu Gln Gly Ser Arg Val Val Val
35          40          45

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Gly Ala Pro Gln Glu Ile Val Ala Ala Asn Gln Arg Gly Ser Leu Tyr
50          55          60

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Gln Cys Asp Tyr Ser Thr Gly Ser Cys Glu Pro Ile Arg Leu Gln Val
65          70          75          80

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Pro Val Glu Ala Val Asn Met Ser Leu Gly Leu Ser Leu Ala Ala Thr
85          90          95

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Thr Ser Pro Pro Gln Leu Leu Ala Cys Gly Pro Thr Val His Gln Thr
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Cys Ser Glu Asn Thr Tyr Val Lys Gly Leu Cys Phe Leu Phe Gly Ser  
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Asn Leu Arg Gln Gln Pro Gln Lys Phe Pro Glu Ala Leu Arg Gly Cys  
 130 135 140

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

Ile Ile Pro His Asp Phe Arg Arg Met Lys Glu Phe Val Ser Thr Val  
 165 170 175

Met Glu Gln Leu Lys Lys Ser Lys Thr Leu Phe Ser Leu Met Gln Tyr  
 180 185 190

Ser Glu Glu Phe Arg Ile His Phe Thr Phe Lys Glu Phe Gln Asn Asn  
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Pro Asn Pro Arg Ser Leu Val Lys Pro Ile Thr Gln Leu Leu Gly Arg  
 210 215 220

Thr His Thr Ala Thr Gly Ile Arg Lys Val Val Arg Glu Leu Phe Asn  
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Ile Thr Asn Gly Ala Arg Lys Asn Ala Phe Lys Ile Leu Val Val Ile  
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Thr Asp Gly Glu Lys Phe Gly Asp Pro Leu Gly Tyr Glu Asp Val Ile  
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Pro Glu Ala Asp Arg Glu Gly Val Ile Arg Tyr Val Ile Gly Val Gly  
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Asp Ala Phe Arg Ser Glu Lys Ser Arg Gln Glu Leu Asn Thr Ile Ala  
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Ser Lys Pro Pro Arg Asp His Val Phe Gln Val Asn Asn Phe Glu Ala  
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Leu Lys Thr Ile Gln Asn Gln Leu Arg Glu Lys Ile Phe Ala Ile Glu  
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Gly Thr Gln Thr Gly Ser Ser Ser Ser Phe Glu His Glu Met Ser Gln  
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Glu Gly Phe Ser Ala Ala Ile Thr Ser Asn Gly Pro Leu Leu Ser Thr  
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Val Gly Ser Tyr Asp Trp Ala Gly Gly Val Phe Leu Tyr Thr Ser Lys  
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Glu Lys Ser Thr Phe Ile Asn Met Thr Arg Val Asp Ser Asp Met Asn  
 385 390 395 400

Asp Ala Tyr Leu Gly Tyr Ala Ala Ala Ile Ile Leu Arg Asn Arg Val  
 405 410 415

Gln Ser Leu Val Leu Gly Ala Pro Arg Tyr Gln His Ile Gly Leu Val  
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Ala Met Phe Arg Gln Asn Thr Gly Met Trp Glu Ser Asn Ala Asn Val  
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Lys Gly Thr Gln Ile Gly Ala Tyr Phe Gly Ala Ser Leu Cys Ser Val  
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Asp Val Asp Ser Asn Gly Ser Thr Asp Leu Val Leu Ile Gly Ala Pro  
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His Tyr Tyr Glu Gln Thr Arg Gly Gly Gln Val Ser Val Cys Pro Leu  
 485 490 495

Pro Arg Gly Gln Arg Ala Arg Trp Gln Cys Asp Ala Val Leu Tyr Gly  
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Glu Gln Gly Gln Pro Trp Gly Arg Phe Gly Ala Ala Leu Thr Val Leu  
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Gly Asp Val Asn Gly Asp Lys Leu Thr Asp Val Ala Ile Gly Ala Pro  
 530 535 540

Gly Glu Glu Asp Asn Arg Gly Ala Val Tyr Leu Phe His Gly Thr Ser  
 545 550 555 560

Gly Ser Gly Ile Ser Pro Ser His Ser Gln Arg Ile Ala Gly Ser Lys  
 565 570 575

Leu Ser Pro Arg Leu Gln Tyr Phe Gly Gln Ser Leu Ser Gly Gly Gln  
 580 585 590

Asp Leu Thr Met Asp Gly Leu Val Asp Leu Thr Val Gly Ala Gln Gly  
 595 600 605

His Val Leu Leu Leu Arg Ser Gln Pro Val Leu Arg Val Lys Ala Ile  
 610 615 620

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930 935 940

Ser Glu Asn Thr Ser Arg Val Met Gln His Gln Tyr Gln Val Ser Asn  
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980 985 990

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995 1000 1005

Ser Asp Phe Leu Ala Glu Leu Arg Lys Ala Pro Val Val Asn Cys  
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Ser Ile Ala Val Cys Gln Arg Ile Gln Cys Asp Ile Pro Phe Phe  
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Gly Ile Gln Glu Glu Phe Asn Ala Thr Leu Lys Gly Asn Leu Ser  
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Phe Asp Trp Tyr Ile Lys Thr Ser His Asn His Leu Leu Ile Val  
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Ser Thr Ala Glu Ile Leu Phe Asn Asp Ser Val Phe Thr Leu Leu  
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Pro Gly Gln Gly Ala Phe Val Arg Ser Gln Thr Glu Thr Lys Val  
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Glu Pro Phe Glu Val Pro Asn Pro Leu Pro Leu Ile Val Gly Ser  
1100 1105 1110

Ser Val Gly Gly Leu Leu Leu Leu Ala Leu Ile Thr Ala Ala Leu  
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Tyr Lys Leu Gly Phe Phe Lys Arg Gln Tyr Lys Asp Met Met Ser  
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Glu Gly Gly Pro Pro Gly Ala Glu Pro Gln  
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<400> 12

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Phe Phe Phe Phe Ala Pro Ala Ser Ser Tyr Asn Leu Asp Val Arg Gly  
 20 25 30

Ala Arg Ser Phe Ser Pro Pro Arg Ala Gly Arg His Phe Gly Tyr Arg  
 35 40 45

Val Leu Gln Val Gly Asn Gly Val Ile Val Gly Ala Pro Gly Glu Gly  
 50 55 60

Asn Ser Thr Gly Ser Leu Tyr Gln Cys Gln Ser Gly Thr Gly His Cys  
 65 70 75 80

Leu Pro Val Thr Leu Arg Gly Ser Asn Tyr Thr Ser Lys Tyr Leu Gly  
 85 90 95

Met Thr Leu Ala Thr Asp Pro Thr Asp Gly Ser Ile Leu Ala Cys Asp  
 100 105 110

Pro Gly Leu Ser Arg Thr Cys Asp Gln Asn Thr Tyr Leu Ser Gly Leu  
 115 120 125

Cys Tyr Leu Phe Arg Gln Asn Leu Gln Gly Pro Met Leu Gln Gly Arg  
 130 135 140

Pro Gly Phe Gln Glu Cys Ile Lys Gly Asn Val Asp Leu Val Phe Leu  
 145 150 155 160

Phe Asp Gly Ser Met Ser Leu Gln Pro Asp Glu Phe Gln Lys Ile Leu  
 165 170 175

Asp Phe Met Lys Asp Val Met Lys Lys Leu Ser Asn Thr Ser Tyr Gln  
 180 185 190

Phe Ala Ala Val Gln Phe Ser Thr Ser Tyr Lys Thr Glu Phe Asp Phe  
 195 200 205

Ser Asp Tyr Val Lys Arg Lys Asp Pro Asp Ala Leu Leu Lys His Val  
 210 215 220

Lys His Met Leu Leu Leu Thr Asn Thr Phe Gly Ala Ile Asn Tyr Val  
 225 230 235 240

Ala Thr Glu Val Phe Arg Glu Glu Leu Gly Ala Arg Pro Asp Ala Thr  
 245 250 255

Lys Val Leu Ile Ile Ile Thr Asp Gly Glu Ala Thr Asp Ser Gly Asn  
 260 265 270

Ile Asp Ala Ala Lys Asp Ile Ile Arg Tyr Ile Ile Gly Ile Gly Lys  
 275 280 285

His Phe Gln Thr Lys Glu Ser Gln Glu Thr Leu His Lys Phe Ala Ser  
 290 295 300

Lys Pro Ala Ser Glu Phe Val Lys Ile Leu Asp Thr Phe Glu Lys Leu  
 305 310 315 320

Lys Asp Leu Phe Thr Glu Leu Gln Lys Lys Ile Tyr Val Ile Glu Gly  
 325 330 335

Thr Ser Lys Gln Asp Leu Thr Ser Phe Asn Met Glu Leu Ser Ser Ser  
 340 345 350

Gly Ile Ser Ala Asp Leu Ser Arg Gly His Ala Val Val Gly Ala Val  
 355 360 365

Gly Ala Lys Asp Trp Ala Gly Gly Phe Leu Asp Leu Lys Ala Asp Leu  
 370 375 380

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

Ala Gly Tyr Leu Gly Tyr Thr Val Thr Trp Leu Pro Ser Arg Gln Lys  
 405 410 415

Thr Ser Leu Leu Ala Ser Gly Ala Pro Arg Tyr Gln His Met Gly Arg  
 420 425 430

Val Leu Leu Phe Gln Glu Pro Gln Gly Gly Gly His Trp Ser Gln Val  
 435 440 445

Gln Thr Ile His Gly Thr Gln Ile Gly Ser Tyr Phe Gly Gly Glu Leu  
 450 455 460

Cys Gly Val Asp Val Asp Gln Asp Gly Glu Thr Glu Leu Leu Leu Ile  
 465 470 475 480

Gly Ala Pro Leu Phe Tyr Gly Glu Gln Arg Gly Gly Arg Val Phe Ile  
 485 490 495

Tyr Gln Arg Arg Gln Leu Gly Phe Glu Glu Val Ser Glu Leu Gln Gly  
 500 505 510

Asp Pro Gly Tyr Pro Leu Gly Arg Phe Gly Glu Ala Ile Thr Ala Leu  
 515 520 525

Thr Asp Ile Asn Gly Asp Gly Leu Val Asp Val Ala Val Gly Ala Pro  
 530 535 540

Leu Glu Glu Gln Gly Ala Val Tyr Ile Phe Asn Gly Arg His Gly Gly  
 545 550 555 560

Leu Ser Pro Gln Pro Ser Gln Arg Ile Glu Gly Thr Gln Val Leu Ser  
 565 570 575

Gly Ile Gln Trp Phe Gly Arg Ser Ile His Gly Val Lys Asp Leu Glu  
 580 585 590

Gly Asp Gly Leu Ala Asp Val Ala Val Gly Ala Glu Ser Gln Met Ile  
 595 600 605

Val Leu Ser Ser Arg Pro Val Val Asp Met Val Thr Leu Met Ser Phe  
 610 615 620

Ser Pro Ala Glu Ile Pro Val His Glu Val Glu Cys Ser Tyr Ser Thr  
 625 630 635 640

Ser Asn Lys Met Lys Glu Gly Val Asn Ile Thr Ile Cys Phe Gln Ile  
 645 650 655

Lys Ser Leu Ile Pro Gln Phe Gln Gly Arg Leu Val Ala Asn Leu Thr  
 660 665 670

Tyr Thr Leu Gln Leu Asp Gly His Arg Thr Arg Arg Gly Leu Phe  
 675 680 685

Pro Gly Gly Arg His Glu Leu Arg Arg Asn Ile Ala Val Thr Thr Ser  
 690 695 700

Met Ser Cys Thr Asp Phe Ser Phe His Phe Pro Val Cys Val Gln Asp  
 705 710 715 720

Leu Ile Ser Pro Ile Asn Val Ser Leu Asn Phe Ser Leu Trp Glu Glu  
                     725                    730                    735

Glu Gly Thr Pro Arg Asp Gln Arg Ala Gln Gly Lys Asp Ile Pro Pro  
                     740                    745                    750

Ile Leu Arg Pro Ser Leu His Ser Glu Thr Trp Glu Ile Pro Phe Glu  
                     755                    760                    765

Lys Asn Cys Gly Glu Asp Lys Lys Cys Glu Ala Asn Leu Arg Val Ser  
                     770                    775                    780

Phe Ser Pro Ala Arg Ser Arg Ala Leu Arg Leu Thr Ala Phe Ala Ser  
 785                    790                    795                    800

Leu Ser Val Glu Leu Ser Leu Ser Asn Leu Glu Glu Asp Ala Tyr Trp  
                     805                    810                    815

Val Gln Leu Asp Leu His Phe Pro Pro Gly Leu Ser Phe Arg Lys Val  
                     820                    825                    830

Glu Met Leu Lys Pro His Ser Gln Ile Pro Val Ser Cys Glu Glu Leu  
                     835                    840                    845

Pro Glu Glu Ser Arg Leu Leu Ser Arg Ala Leu Ser Cys Asn Val Ser  
                     850                    855                    860

Ser Pro Ile Phe Lys Ala Gly His Ser Val Ala Leu Gln Met Met Phe  
 865                    870                    875                    880

Asn Thr Leu Val Asn Ser Ser Trp Gly Asp Ser Val Glu Leu His Ala  
                     885                    890                    895

Asn Val Thr Cys Asn Asn Glu Asp Ser Asp Leu Leu Glu Asp Asn Ser  
                     900                    905                    910

Ala Thr Thr Ile Ile Pro Ile Leu Tyr Pro Ile Asn Ile Leu Ile Gln  
                     915                    920                    925

Asp Gln Glu Asp Ser Thr Leu Tyr Val Ser Phe Thr Pro Lys Gly Pro  
                     930                    935                    940

Lys Ile His Gln Val Lys His Met Tyr Gln Val Arg Ile Gln Pro Ser  
 945                    950                    955                    960

Ile His Asp His Asn Ile Pro Thr Leu Glu Ala Val Val Gly Val Pro  
                     965                    970                    975

Gln Pro Pro Ser Glu Gly Pro Ile Thr His Gln Trp Ser Val Gln Met  
 980 985 990

Glu Pro Pro Val Pro Cys His Tyr Glu Asp Leu Glu Arg Leu Pro Asp  
 995 1000 1005

Ala Ala Glu Pro Cys Leu Pro Gly Ala Leu Phe Arg Cys Pro Val  
 1010 1015 1020

Val Phe Arg Gln Glu Ile Leu Val Gln Val Ile Gly Thr Leu Glu  
 1025 1030 1035

Leu Val Gly Glu Ile Glu Ala Ser Ser Met Phe Ser Leu Cys Ser  
 1040 1045 1050

Ser Leu Ser Ile Ser Phe Asn Ser Ser Lys His Phe His Leu Tyr  
 1055 1060 1065

Gly Ser Asn Ala Ser Leu Ala Gln Val Val Met Lys Val Asp Val  
 1070 1075 1080

Val Tyr Glu Lys Gln Met Leu Tyr Leu Tyr Val Leu Ser Gly Ile  
 1085 1090 1095

Gly Gly Leu Leu Leu Leu Leu Leu Ile Phe Ile Val Leu Tyr Lys  
 1100 1105 1110

Val Gly Phe Phe Lys Arg Asn Leu Lys Glu Lys Met Glu Ala Gly  
 1115 1120 1125

Arg Gly Val Pro Asn Gly Ile Pro Ala Glu Asp Ser Glu Gln Leu  
 1130 1135 1140

Ala Ser Gly Gln Glu Ala Gly Asp Pro Gly Cys Leu Lys Pro Leu  
 1145 1150 1155

His Glu Lys Asp Ser Glu Ser Gly Gly Gly Lys Asp  
 1160 1165 1170

<210> 13  
 <211> 231  
 <212> PRT  
 <213> Homo sapiens

<400> 13

Met Gly Asp Glu Arg Pro His Tyr Tyr Gly Lys His Gly Thr Pro Gln  
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Lys Tyr Asp Pro Thr Phe Lys Gly Pro Ile Tyr Asn Arg Gly Cys Thr  
                   20                  25                  30  
 Asp Ile Ile Cys Cys Val Phe Leu Leu Ala Ile Val Gly Tyr Val  
           35                  40                  45  
 Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp Pro Arg Lys Val Ile  
       50                  55                  60  
 Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys  
   65                  70                  75                  80  
 Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala  
           85                  90                  95  
 Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys  
          100                 105                 110  
 Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser  
      115                 120                 125  
 Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys  
   130                 135                 140  
 Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala  
  145                 150                 155                 160  
 Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile  
          165                 170                 175  
 His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu  
          180                 185                 190  
 Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val Glu Gly Ala  
      195                 200                 205  
 Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala Met Arg Ile  
   210                 215                 220  
 Phe Glu Asp Tyr Thr Val Ser  
  225                 230

<210> 14  
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 <212> PRT  
 <213> Homo sapiens

<400> 14

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
65 70 75 80

Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
85 90 95

Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys  
100 105 110

Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val  
115 120 125

Leu

<210> 15

<211> 110

<212> PRT

<213> Homo sapiens

<400> 15

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
65 70 75 80



Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
85 90 95

Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro  
100 105 110

<210> 16  
<211> 51  
<212> PRT  
<213> Homo sapiens

<400> 16

Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser  
1 5 10 15

Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn  
20 25 30

Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val  
35 40 45

Leu Ile Pro  
50

<210> 17  
<211> 652  
<212> PRT  
<213> Homo sapiens

<400> 17

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
65 70 75 80

Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
85 90 95

Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys

100	105	110
Pro Leu Ala Arg Arg Cys Phe 115	Pro Ala Ile His Ala 120	Tyr Lys Gly Val 125
Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp Gly His Gly Ser Arg 130	135	140
Lys Asn Ile Thr Asp Leu Val Glu Gly Ala Lys Lys Ala Asn Gly Val 145	150	155 160
Leu Glu Ala Arg Gln Leu Ala Met Arg Ile Phe Glu Asp Tyr Thr Val 165	170	175
Ser Trp Tyr Trp Ile Ile Ile Gly Leu Val Ile Ala Met Ala Met Ser 180	185	190
Leu Leu Phe Ile Ile Leu Leu Arg Phe Leu Ala Gly Ile Met Val Trp 195	200	205
Val Met Ile Ile Met Val Ile Leu Val Leu Gly Tyr Gly Ile Phe His 210	215	220
Cys Tyr Met Glu Tyr Ser Arg Leu Arg Gly Glu Ala Gly Ser Asp Val 225	230 235	240
Ser Leu Val Asp Leu Gly Phe Gln Thr Asp Phe Arg Val Tyr Leu His 245	250	255
Leu Arg Gln Thr Trp Leu Ala Phe Met Ile Ile Leu Ser Ile Leu Glu 260	265	270
Val Ile Ile Ile Leu Leu Leu Ile Phe Leu Arg Lys Arg Ile Leu Ile 275	280	285
Ala Ile Ala Leu Ile Lys Glu Ala Ser Arg Ala Val Gly Tyr Val Met 290	295	300
Cys Ser Leu Leu Tyr Pro Leu Val Thr Phe Phe Leu Leu Cys Leu Cys 305	310 315	320
Ile Ala Tyr Trp Ala Ser Thr Ala Val Phe Leu Ser Thr Ser Asn Glu 325	330	335
Ala Val Tyr Lys Ile Phe Asp Asp Ser Pro Cys Pro Phe Thr Ala Lys 340	345	350

Thr Cys Asn Pro Glu Thr Phe Pro Ser Ser Asn Glu Ser Arg Gln Cys  
 355 360 365

Pro Asn Ala Arg Cys Gln Phe Ala Phe Tyr Gly Gly Glu Ser Gly Tyr  
 370 375 380

His Arg Ala Leu Leu Gly Leu Gln Ile Phe Asn Ala Phe Met Phe Phe  
 385 390 395 400

Trp Leu Ala Asn Phe Val Leu Ala Leu Gly Gln Val Thr Leu Ala Gly  
 405 410 415

Ala Phe Ala Ser Tyr Tyr Trp Ala Leu Arg Lys Pro Asp Asp Leu Pro  
 420 425 430

Ala Phe Pro Leu Phe Ser Ala Phe Gly Arg Ala Leu Arg Tyr His Thr  
 435 440 445

Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu Ala Ile Val Gln Ile Ile  
 450 455 460

Arg Val Ile Leu Glu Tyr Leu Asp Gln Arg Leu Lys Ala Ala Glu Asn  
 465 470 475 480

Lys Phe Ala Lys Cys Leu Met Thr Cys Leu Lys Cys Cys Phe Trp Cys  
 485 490 495

Leu Glu Lys Phe Ile Lys Phe Leu Asn Arg Asn Ala Tyr Ile Met Ile  
 500 505 510

Ala Ile Tyr Gly Thr Asn Phe Cys Thr Ser Ala Arg Asn Ala Phe Phe  
 515 520 525

Leu Leu Met Arg Asn Ile Ile Arg Val Ala Val Leu Asp Lys Val Thr  
 530 535 540

Asp Phe Leu Phe Leu Leu Gly Lys Leu Leu Ile Val Gly Ser Val Gly  
 545 550 555 560

Ile Leu Ala Phe Phe Phe Phe Thr His Arg Ile Arg Ile Val Gln Asp  
 565 570 575

Thr Ala Pro Pro Leu Asn Tyr Tyr Trp Val Pro Ile Leu Thr Val Ile  
 580 585 590

Val Gly Ser Tyr Leu Ile Ala His Gly Phe Phe Ser Val Tyr Gly Met  
 595 600 605

Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu Asp Leu Glu Arg Asn  
610 615 620

Asp Gly Ser Ala Glu Arg Pro Tyr Phe Met Ser Ser Thr Leu Lys Lys  
625 630 635 640

Leu Leu Asn Lys Thr Asn Lys Lys Ala Ala Glu Ser  
645 650

<210> 18  
<211> 593  
<212> PRT  
<213> Homo sapiens

<400> 18

Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser  
1 5 10 15

Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn  
20 25 30

Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val  
35 40 45

Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His  
50 55 60

Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp  
65 70 75 80

Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val Glu Gly Ala Lys  
85 90 95

Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala Met Arg Ile Phe  
100 105 110

Glu Asp Tyr Thr Val Ser Trp Tyr Trp Ile Ile Ile Gly Leu Val Ile  
115 120 125

Ala Met Ala Met Ser Leu Leu Phe Ile Ile Leu Leu Arg Phe Leu Ala  
130 135 140

Gly Ile Met Val Trp Val Met Ile Ile Met Val Ile Leu Val Leu Gly  
145 150 155 160

Tyr Gly Ile Phe His Cys Tyr Met Glu Tyr Ser Arg Leu Arg Gly Glu  
165 170 175

Ala Gly Ser Asp Val Ser Leu Val Asp Leu Gly Phe Gln Thr Asp Phe  
 180 185 190

Arg Val Tyr Leu His Leu Arg Gln Thr Trp Leu Ala Phe Met Ile Ile  
 195 200 205

Leu Ser Ile Leu Glu Val Ile Ile Ile Leu Leu Leu Ile Phe Leu Arg  
 210 215 220

Lys Arg Ile Leu Ile Ala Ile Ala Leu Ile Lys Glu Ala Ser Arg Ala  
 225 230 235 240

Val Gly Tyr Val Met Cys Ser Leu Leu Tyr Pro Leu Val Thr Phe Phe  
 245 250 255

Leu Leu Cys Leu Cys Ile Ala Tyr Trp Ala Ser Thr Ala Val Phe Leu  
 260 265 270

Ser Thr Ser Asn Glu Ala Val Tyr Lys Ile Phe Asp Asp Ser Pro Cys  
 275 280 285

Pro Phe Thr Ala Lys Thr Cys Asn Pro Glu Thr Phe Pro Ser Ser Asn  
 290 295 300

Glu Ser Arg Gln Cys Pro Asn Ala Arg Cys Gln Phe Ala Phe Tyr Gly  
 305 310 315 320

Gly Glu Ser Gly Tyr His Arg Ala Leu Leu Gly Leu Gln Ile Phe Asn  
 325 330 335

Ala Phe Met Phe Phe Trp Leu Ala Asn Phe Val Leu Ala Leu Gly Gln  
 340 345 350

Val Thr Leu Ala Gly Ala Phe Ala Ser Tyr Tyr Trp Ala Leu Arg Lys  
 355 360 365

Pro Asp Asp Leu Pro Ala Phe Pro Leu Phe Ser Ala Phe Gly Arg Ala  
 370 375 380

Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu Ala  
 385 390 395 400

Ile Val Gln Ile Ile Arg Val Ile Leu Glu Tyr Leu Asp Gln Arg Leu  
 405 410 415

Lys Ala Ala Glu Asn Lys Phe Ala Lys Cys Leu Met Thr Cys Leu Lys  
 420 425 430

Cys Cys Phe Trp Cys Leu Glu Lys Phe Ile Lys Phe Leu Asn Arg Asn  
 435 440 445

Ala Tyr Ile Met Ile Ala Ile Tyr Gly Thr Asn Phe Cys Thr Ser Ala  
 450 455 460

Arg Asn Ala Phe Phe Leu Leu Met Arg Asn Ile Ile Arg Val Ala Val  
 465 470 475 480

Leu Asp Lys Val Thr Asp Phe Leu Phe Leu Leu Gly Lys Leu Leu Ile  
 485 490 495

Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe Thr His Arg Ile  
 500 505 510

Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr Tyr Trp Val Pro  
 515 520 525

Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala His Gly Phe Phe  
 530 535 540

Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu  
 545 550 555 560

Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Pro Tyr Phe Met Ser  
 565 570 575

Ser Thr Leu Lys Lys Leu Leu Asn Lys Thr Asn Lys Lys Ala Ala Glu  
 580 585 590

Ser

<210> 19  
 <211> 231  
 <212> PRT  
 <213> Homo sapiens

<400> 19

Met Gly Asp Glu Arg Pro His Tyr Tyr Gly Lys His Gly Thr Pro Gln  
 1 5 10 15

Lys Tyr Asp Pro Thr Phe Lys Gly Pro Ile Tyr Asn Arg Gly Cys Thr  
 20 25 30

Asp Ile Ile Cys Cys Val Phe Leu Leu Leu Ala Ile Val Gly Tyr Val  
 35 40 45

Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp Pro Arg Lys Val Ile  
50 55 60

Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys  
65 70 75 80

Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala  
85 90 95

Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys  
100 105 110

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

Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys  
130 135 140

Asn Asn Lys Gly Val Ala Glu Val Leu Gln Asp Gly Asp Cys Pro Ala  
145 150 155 160

Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile  
165 170 175

His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu  
180 185 190

Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val Glu Gly Ala  
195 200 205

Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala Met Arg Ile  
210 215 220

Phe Glu Asp Tyr Thr Val Ser  
225 230

<210> 20  
<211> 129  
<212> PRT  
<213> Homo sapiens

<400> 20

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
 35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
 50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
 65 70 75 80

Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
 85 90 95

Glu Val Leu Gln Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys  
 100 105 110

Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val  
 115 120 125

Leu

<210> 21  
 <211> 110  
 <212> PRT  
 <213> Homo sapiens

<400> 21

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
 1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
 20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
 35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
 50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
 65 70 75 80

Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
 85 90 95

Glu Val Leu Gln Asp Gly Asp Cys Pro Ala Val Leu Ile Pro  
 100 105 110



<210> 22  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 22

Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser  
 1 5 10 15

Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn  
 20 25 30

Asn Lys Gly Val Ala Glu Val Leu Gln Asp Gly Asp Cys Pro Ala Val  
 35 40 45

Leu Ile Pro  
 50

<210> 23  
 <211> 652  
 <212> PRT  
 <213> Homo sapiens

<400> 23

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
 1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
 20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
 35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
 50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
 65 70 75 80

Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
 85 90 95

Glu Val Leu Gln Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys  
 100 105 110

Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val  
 115 120 125

Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp Gly His Gly Ser Arg

130		135		140
Lys Asn Ile Thr Asp Leu Val Glu Gly Ala Lys Lys Ala Asn Gly Val				
145		150		155 160
Leu Glu Ala Arg Gln Leu Ala Met Arg Ile Phe Glu Asp Tyr Thr Val				
	165		170	175
Ser Trp Tyr Trp Ile Ile Ile Gly Leu Val Ile Ala Met Ala Met Ser				
	180		185	190
Leu Leu Phe Ile Ile Leu Leu Arg Phe Leu Ala Gly Ile Met Val Trp				
	195		200	205
Val Met Ile Ile Met Val Ile Leu Val Leu Gly Tyr Gly Ile Phe His				
	210		215	220
Cys Tyr Met Glu Tyr Ser Arg Leu Arg Gly Glu Ala Gly Ser Asp Val				
225		230		235 240
Ser Leu Val Asp Leu Gly Phe Gln Thr Asp Phe Arg Val Tyr Leu His				
	245		250	255
Leu Arg Gln Thr Trp Leu Ala Phe Met Ile Ile Leu Ser Ile Leu Glu				
	260		265	270
Val Ile Ile Ile Leu Leu Leu Ile Phe Leu Arg Lys Arg Ile Leu Ile				
	275		280	285
Ala Ile Ala Leu Ile Lys Glu Ala Ser Arg Ala Val Gly Tyr Val Met				
	290		295	300
Cys Ser Leu Leu Tyr Pro Leu Val Thr Phe Phe Leu Leu Cys Leu Cys				
305		310		315 320
Ile Ala Tyr Trp Ala Ser Thr Ala Val Phe Leu Ser Thr Ser Asn Glu				
	325		330	335
Ala Val Tyr Lys Ile Phe Asp Asp Ser Pro Cys Pro Phe Thr Ala Lys				
	340		345	350
Thr Cys Asn Pro Glu Thr Phe Pro Ser Ser Asn Glu Ser Arg Gln Cys				
	355		360	365
Pro Asn Ala Arg Cys Gln Phe Ala Phe Tyr Gly Gly Glu Ser Gly Tyr				
	370		375	380

His Arg Ala Leu Leu Gly Leu Gln Ile Phe Asn Ala Phe Met Phe Phe  
 385 390 395 400

Trp Leu Ala Asn Phe Val Leu Ala Leu Gly Gln Val Thr Leu Ala Gly  
 405 410 415

Ala Phe Ala Ser Tyr Tyr Trp Ala Leu Arg Lys Pro Asp Asp Leu Pro  
 420 425 430

Ala Phe Pro Leu Phe Ser Ala Phe Gly Arg Ala Leu Arg Tyr His Thr  
 435 440 445

Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu Ala Ile Val Gln Ile Ile  
 450 455 460

Arg Val Ile Leu Glu Tyr Leu Asp Gln Arg Leu Lys Ala Ala Glu Asn  
 465 470 475 480

Lys Phe Ala Lys Cys Leu Met Thr Cys Leu Lys Cys Cys Phe Trp Cys  
 485 490 495

Leu Glu Lys Phe Ile Lys Phe Leu Asn Arg Asn Ala Tyr Ile Met Ile  
 500 505 510

Ala Ile Tyr Gly Thr Asn Phe Cys Thr Ser Ala Arg Asn Ala Phe Phe  
 515 520 525

Leu Leu Met Arg Asn Ile Ile Arg Val Ala Val Leu Asp Lys Val Thr  
 530 535 540

Asp Phe Leu Phe Leu Leu Gly Lys Leu Leu Ile Val Gly Ser Val Gly  
 545 550 555 560

Ile Leu Ala Phe Phe Phe Phe Thr His Arg Ile Arg Ile Val Gln Asp  
 565 570 575

Thr Ala Pro Pro Leu Asn Tyr Tyr Trp Val Pro Ile Leu Thr Val Ile  
 580 585 590

Val Gly Ser Tyr Leu Ile Ala His Gly Phe Phe Ser Val Tyr Gly Met  
 595 600 605

Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu Asp Leu Glu Arg Asn  
 610 615 620

Asp Gly Ser Ala Glu Arg Pro Tyr Phe Met Ser Ser Thr Leu Lys Lys  
 625 630 635 640

Leu Leu Asn Lys Thr Asn Lys Lys Ala Ala Glu Ser  
645 650

<210> 24  
<211> 593  
<212> PRT  
<213> Homo sapiens

<400> 24

Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser  
1 5 10 15

Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn  
20 25 30

Asn Lys Gly Val Ala Glu Val Leu Gln Asp Gly Asp Cys Pro Ala Val  
35 40 45

Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His  
50 55 60

Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp  
65 70 75 80

Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val Glu Gly Ala Lys  
85 90 95

Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala Met Arg Ile Phe  
100 105 110

Glu Asp Tyr Thr Val Ser Trp Tyr Trp Ile Ile Ile Gly Leu Val Ile  
115 120 125

Ala Met Ala Met Ser Leu Leu Phe Ile Ile Leu Leu Arg Phe Leu Ala  
130 135 140

Gly Ile Met Val Trp Val Met Ile Ile Met Val Ile Leu Val Leu Gly  
145 150 155 160

Tyr Gly Ile Phe His Cys Tyr Met Glu Tyr Ser Arg Leu Arg Gly Glu  
165 170 175

Ala Gly Ser Asp Val Ser Leu Val Asp Leu Gly Phe Gln Thr Asp Phe  
180 185 190

Arg Val Tyr Leu His Leu Arg Gln Thr Trp Leu Ala Phe Met Ile Ile  
195 200 205

Leu Ser Ile Leu Glu Val Ile Ile Ile Leu Leu Leu Ile Phe Leu Arg  
 210 215 220

Lys Arg Ile Leu Ile Ala Ile Ala Leu Ile Lys Glu Ala Ser Arg Ala  
 225 230 235 240

Val Gly Tyr Val Met Cys Ser Leu Leu Tyr Pro Leu Val Thr Phe Phe  
 245 250 255

Leu Leu Cys Leu Cys Ile Ala Tyr Trp Ala Ser Thr Ala Val Phe Leu  
 260 265 270

Ser Thr Ser Asn Glu Ala Val Tyr Lys Ile Phe Asp Asp Ser Pro Cys  
 275 280 285

Pro Phe Thr Ala Lys Thr Cys Asn Pro Glu Thr Phe Pro Ser Ser Asn  
 290 295 300

Glu Ser Arg Gln Cys Pro Asn Ala Arg Cys Gln Phe Ala Phe Tyr Gly  
 305 310 315 320

Gly Glu Ser Gly Tyr His Arg Ala Leu Leu Gly Leu Gln Ile Phe Asn  
 325 330 335

Ala Phe Met Phe Phe Trp Leu Ala Asn Phe Val Leu Ala Leu Gly Gln  
 340 345 350

Val Thr Leu Ala Gly Ala Phe Ala Ser Tyr Tyr Trp Ala Leu Arg Lys  
 355 360 365

Pro Asp Asp Leu Pro Ala Phe Pro Leu Phe Ser Ala Phe Gly Arg Ala  
 370 375 380

Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu Ala  
 385 390 395 400

Ile Val Gln Ile Ile Arg Val Ile Leu Glu Tyr Leu Asp Gln Arg Leu  
 405 410 415

Lys Ala Ala Glu Asn Lys Phe Ala Lys Cys Leu Met Thr Cys Leu Lys  
 420 425 430

Cys Cys Phe Trp Cys Leu Glu Lys Phe Ile Lys Phe Leu Asn Arg Asn  
 435 440 445

Ala Tyr Ile Met Ile Ala Ile Tyr Gly Thr Asn Phe Cys Thr Ser Ala  
 450 455 460

Arg Asn Ala Phe Phe Leu Leu Met Arg Asn Ile Ile Arg Val Ala Val  
 465 470 475 480

Leu Asp Lys Val Thr Asp Phe Leu Phe Leu Leu Gly Lys Leu Leu Ile  
 485 490 495

Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe Thr His Arg Ile  
 500 505 510

Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr Tyr Trp Val Pro  
 515 520 525

Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala His Gly Phe Phe  
 530 535 540

Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu  
 545 550 555 560

Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Pro Tyr Phe Met Ser  
 565 570 575

Ser Thr Leu Lys Lys Leu Leu Asn Lys Thr Asn Lys Lys Ala Ala Glu  
 580 585 590

Ser

<210> 25  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 25

Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro  
 1 5 10

<210> 26  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 26

Gln Asp Gly Asp Cys Pro Ala Val Leu Ile Pro  
 1 5 10

<210> 27  
 <211> 177  
 <212> PRT  
 <213> Homo sapiens

<400> 27

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
35 40 45

Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp  
50 55 60

Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr  
65 70 75 80

Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala  
85 90 95

Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys  
100 105 110

Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val  
115 120 125

Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp Gly His Gly Ser Arg  
130 135 140

Lys Asn Ile Thr Asp Leu Val Glu Gly Ala Lys Lys Ala Asn Gly Val  
145 150 155 160

Leu Glu Ala Arg Gln Leu Ala Met Arg Ile Phe Glu Asp Tyr Thr Val  
165 170 175

Ser

<210> 28

<211> 51

<212> PRT

<213> Homo sapiens

<400> 28

Trp Thr His Gly Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg  
1 5 10 15

Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr  
20 25 30

Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu  
 35 40 45

Glu Phe Gln  
 50

<210> 29  
 <211> 49  
 <212> PRT  
 <213> Homo sapiens

<400> 29

Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr  
 1 5 10 15

Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys  
 20 25 30

Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val  
 35 40 45

Leu

<210> 30  
 <211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 30

Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg  
 1 5 10 15

Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly  
 20 25 30

Asn Glu Thr Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn  
 35 40 45

<210> 31  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 31

Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val  
 1 5 10 15

Glu Gly Ala Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala



	20	25	30
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Met Arg Ile Phe Glu Asp Tyr Thr Val Ser  
35 40

<210> 32  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 32

Ala Glu Val Leu Arg Asp Gly Asp Cys Pro  
1 5 10

<210> 33  
<211> 24  
<212> PRT  
<213> Homo sapiens

<400> 33

Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro  
1 5 10 15

Ala Val Leu Ile Pro Ser Lys Pro  
20

<210> 34  
<211> 41  
<212> PRT  
<213> Homo sapiens

<400> 34

Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val  
1 5 10 15

Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser  
20 25 30

Lys Pro Leu Ala Arg Arg Cys Phe Pro  
35 40

<210> 35  
<211> 60  
<212> PRT  
<213> Homo sapiens

<400> 35

Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys  
1 5 10 15

Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp  
 20 25 30

Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg  
 35 40 45

Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val Leu  
 50 55 60

<210> 36  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 36

Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser  
 1 5 10 15

Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn  
 20 25 30

Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val  
 35 40 45

Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His  
 50 55 60

Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp  
 65 70 75 80

Gly

<210> 37  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 37

Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr  
 1 5 10 15

Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys  
 20 25 30

Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val  
 35 40 45

Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu

50	55	60
Ala Arg Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met		
65	70	75 80
Val Gly Asn Glu Thr Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn		
	85	90 95
<210> 38		
<211> 121		
<212> PRT		
<213> Homo sapiens		
<400> 38		
Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro		
1	5	10 15
Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn		
	20	25 30
Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro		
	35	40 45
Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp		
50	55	60
Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe		
65	70	75 80
Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr		
	85	90 95
Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val		
	100	105 110
Glu Gly Ala Lys Lys Ala Asn Gly Val		
115	120	
<210> 39		
<211> 137		
<212> PRT		
<213> Homo sapiens		
<400> 39		
Lys Pro Tyr Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala Ser Pro Leu		
1	5	10 15
Val Leu Leu Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys Val Glu Lys		
	20	25 30

Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser Ser Arg Asp  
35 40 45

Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys  
50 55 60

Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile  
65 70 75 80

Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile His Ala Tyr  
85 90 95

Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu Asp Gly His  
100 105 110

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

Asn Gly Val Leu Glu Ala Arg Gln Leu  
130 135

<210> 40  
<211> 121  
<212> PRT  
<213> Homo sapiens

<400> 40

Ile Val Gly Tyr Val Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp  
1 5 10 15

Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys Gly  
20 25 30

Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe Asn  
35 40 45

Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro  
50 55 60

Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr  
65 70 75 80

Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys  
85 90 95

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

Gly Asp Cys Pro Ala Val Leu Ile Pro  
115 120

<210> 41  
<211> 90  
<212> PRT  
<213> Homo sapiens

<400> 41

Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe  
1 5 10 15

Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys  
20 25 30

Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr  
35 40 45

Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe  
50 55 60

Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg  
65 70 75 80

Asp Gly Asp Cys Pro Ala Val Leu Ile Pro  
85 90

<210> 42  
<211> 71  
<212> PRT  
<213> Homo sapiens

<400> 42

Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro  
1 5 10 15

Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn  
20 25 30

Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro  
35 40 45

Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp  
50 55 60

Cys Pro Ala Val Leu Ile Pro  
65 70

<210> 43

<211> 31  
<212> PRT  
<213> Homo sapiens

<400> 43

Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val  
1 5 10 15

Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro  
20 25 30

<210> 44  
<211> 42  
<212> PRT  
<213> Homo sapiens

<400> 44

Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp  
1 5 10 15

Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe  
20 25 30

Pro Ala Ile His Ala Tyr Lys Gly Val Leu  
35 40

<210> 45  
<211> 59  
<212> PRT  
<213> Homo sapiens

<400> 45

Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp  
1 5 10 15

Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe  
20 25 30

Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr  
35 40 45

Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn  
50 55

<210> 46  
<211> 81  
<212> PRT  
<213> Homo sapiens

<400> 46

Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp  
 1 5 10 15

Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe  
 20 25 30

Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr  
 35 40 45

Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val  
 50 55 60

Glu Gly Ala Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala  
 65 70 75 80

Met

<210> 47  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 47

Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp  
 1 5 10 15

Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe  
 20 25 30

Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr  
 35 40 45

Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val  
 50 55 60

Glu Gly Ala Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala  
 65 70 75 80

Met Arg Ile Phe Glu Asp Tyr Thr Val Ser  
 85 90

<210> 48  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 48

Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala

1	5				10				15						
Val	Leu	Ile	Pro	Ser	Lys	Pro	Leu	Ala	Arg	Arg	Cys	Phe	Pro	Ala	Ile
			20					25					30		

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<210> 49
<211> 18
<212> DNA
<213> Homo sapiens
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<400> 49
agtggctgag gtgcttcg
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<220>
<221>  misc_feature
<223>  HNA-3b

<400>  50
gagtggctga ggtgcttca
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<400> 51
gtgcgccaat atcctcactt g 21
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<400> 52
cagtgcccttc ccaaccattc cctta
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<400> 53



atccactcac ggatttctgt tgtgtttc

28