SEQUENCE LISTING

<110> GENENTECH, INC.
VAN LOOKEREN CAMPAGNE, Menno

<120> C3B ANTIBODIES AND METHODS FOR THE PREVENTION AND TREATMENT OF COMPLEMENT-ASSOCIATED DISORDERS

<130> 39766-0250PCT

<140> Not yet Assigned
<141> Herewith

<150> 61/055,068
<151> 2008-05-21

<150> 60/933,721
<151> 2007-06-07

<160> 19

<170> PatentIn Ver. 3.3

<210> 1
<211> 44
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic SS7 heavy chain region

<400> 1
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15

Ala Tyr Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
35 40

<210> 2
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic SS7 heavy chain region

<400> 2
Gly Phe Ser Phe Thr Ser Ser Ser Val Ser Trp Val Arg Gln Ala Pro
1 5 10 15

Gly Lys Gly Leu Glu Trp Val Gly Leu
20 25

<210> 3
<211> 48
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic SS7 heavy chain region

<400> 3
Ile Tyr Pro Tyr Asn Gly Phe Asn Tyr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

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

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
35 40 45

<210> 4
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic SS7 heavy chain region

<400> 4
Asn Ala Leu Tyr Gly Ser Gly Gly Tyr Tyr Ala Met Asp Tyr Trp Gly
1 5 10 15

Gln Gly Thr Leu Val Thr Val Ser Ser Ala
20 25

<210> 5
<211> 42
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic S77 light chain region

<400> 5
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15

Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
20 25 30

Ser Val Gly Asp Arg Val Thr Ile Thr Cys
35 40

<210> 6
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic S77 light chain region

<400> 6
Arg Ala Ser Gln Asp Val Ser Thr Ala Val Ala Trp Tyr Gln Gln Lys
1 5 10 15

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
20 25

<210> 7
<211> 39
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic S77 light chain region

<400> 7
Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
1 5 10 15

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
20 25 30

Asp Phe Ala Thr Tyr Tyr Cys
35

<210> 8
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic S77 light chain region

<400> 8
Gln Gln Ser Tyr Ala Thr Leu Pro Thr Phe Glu Gln Gly Thr Lys Val
1 5 10 15

Glu Ile Lys

<210> 9
<211> 1641
<212> PRT
<213> Homo sapiens

<400> 9
Ser Pro Met Tyr Ser Ile Ile Thr Pro Asn Ile Leu Arg Leu Glu Ser
1 5 10 15

Glu Glu Thr Met Val Leu Glu Ala His Asp Ala Gln Gly Asp Val Pro
20 25 30

Val Thr Val Thr Val His Asp Phe Pro Gly Lys Lys Leu Val Leu Ser
35 40 45

Ser Glu Lys Thr Val Leu Thr Pro Ala Thr Asn His Met Gly Asn Val
50 55 60

Thr Phe Thr Ile Pro Ala Asn Arg Glu Phe Lys Ser Glu Lys Gly Arg
65 70 75 80

Asn Lys Phe Val Thr Val Gln Ala Thr Phe Gly Thr Gln Val Val Glu
85 90 95

Lys Val Val Leu Val Ser Leu Gln Ser Gly Tyr Leu Phe Ile Gln Thr
100 105 110

Asp Lys Thr Ile Tyr Thr Pro Gly Ser Thr Val Leu Tyr Arg Ile Phe
115 120 125

Thr Val Asn His Lys Leu Leu Pro Val Gly Arg Thr Val Met Val Asn
130 135 140

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

Gln Asn Gln Leu Gly Val Leu Pro Leu Ser Trp Asp Ile Pro Glu Leu
165 170 175

Val Asn Met Gly Gln Trp Lys Ile Arg Ala Tyr Tyr Glu Asn Ser Pro
180 185 190

Gln Gln Val Phe Ser Thr Glu Phe Glu Val Lys Glu Tyr Val Leu Pro
195 200 205

Ser Phe Glu Val Ile Val Glu Pro Thr Glu Lys Phe Tyr Tyr Ile Tyr
210 215 220

Asn Glu Lys Gly Leu Glu Val Thr Ile Thr Ala Arg Phe Leu Tyr Gly
225 230 235 240

Lys Lys Val Glu Gly Thr Ala Phe Val Ile Phe Gly Ile Gln Asp Gly
245 250 255

```
Glu Gln Arg Ile Ser Leu Pro Glu Ser Leu Lys Arg Ile Pro Ile Glu
            260                 265                 270

Asp Gly Ser Gly Glu Val Val Leu Ser Arg Lys Val Leu Leu Asp Gly
        275                 280                 285

Val Gln Asn Leu Arg Ala Glu Asp Leu Val Gly Lys Ser Leu Tyr Val
    290                 295                 300

Ser Ala Thr Val Ile Leu His Ser Gly Ser Asp Met Val Gln Ala Glu
305                 310                 315                 320

Arg Ser Gly Ile Pro Ile Val Thr Ser Pro Tyr Gln Ile His Phe Thr
                325                 330                 335

Lys Thr Pro Lys Tyr Phe Lys Pro Gly Met Pro Phe Asp Leu Met Val
            340                 345                 350

Phe Val Thr Asn Pro Asp Gly Ser Pro Ala Tyr Arg Val Pro Ala Val
        355                 360                 365

Ala Val Gln Gly Glu Asp Thr Val Gln Ser Leu Thr Gln Gly Asp Gly
    370                 375                 380

Val Ala Lys Leu Ser Ile Asn Thr His Pro Ser Gln Lys Pro Leu Ser
385                 390                 395                 400

Ile Thr Val Arg Thr Lys Lys Gln Glu Leu Ser Glu Ala Glu Gln Ala
                405                 410                 415

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

Asn Tyr Leu His Leu Ser Val Leu Arg Thr Glu Leu Arg Pro Gly Glu
        435                 440                 445

Thr Leu Asn Val Asn Phe Leu Leu Arg Met Asp Arg Ala His Glu Ala
    450                 455                 460

Lys Ile Arg Tyr Tyr Thr Tyr Leu Ile Met Asn Lys Gly Arg Leu Leu
465                 470                 475                 480

Lys Ala Gly Arg Gln Val Arg Glu Pro Gly Gln Asp Leu Val Val Leu
                485                 490                 495

Pro Leu Ser Ile Thr Thr Asp Phe Ile Pro Ser Phe Arg Leu Val Ala
            500                 505                 510

Tyr Tyr Thr Leu Ile Gly Ala Ser Gly Gln Arg Glu Val Val Ala Asp
        515                 520                 525

Ser Val Trp Val Asp Val Lys Asp Ser Cys Val Gly Ser Leu Val Val
    530                 535                 540

Lys Ser Gly Gln Ser Glu Asp Arg Gln Pro Val Pro Gly Gln Gln Met
545                 550                 555                 560

Thr Leu Lys Ile Glu Gly Asp His Gly Ala Arg Val Val Leu Val Ala
                565                 570                 575

Val Asp Lys Gly Val Phe Val Leu Asn Lys Lys Asn Lys Leu Thr Gln
            580                 585                 590

Ser Lys Ile Trp Asp Val Val Glu Lys Ala Asp Ile Gly Cys Thr Pro
        595                 600                 605

Gly Ser Gly Lys Asp Tyr Ala Gly Val Phe Ser Asp Ala Gly Leu Thr
    610                 615                 620

Phe Thr Ser Ser Ser Gly Gln Gln Thr Ala Gln Arg Ala Glu Leu Gln
625                 630                 635                 640

Cys Pro Gln Pro Ala Ala Arg Arg Arg Arg Ser Val Gln Leu Thr Glu
                645                 650                 655

Lys Arg Met Asp Lys Val Gly Lys Tyr Pro Lys Glu Leu Arg Lys Cys
```

660 665 670

Cys Glu Asp Gly Met Arg Glu Asn Pro Met Arg Phe Ser Cys Gln Arg
675 680 685

Arg Thr Arg Phe Ile Ser Leu Gly Glu Ala Cys Lys Lys Val Phe Leu
690 695 700

Asp Cys Cys Asn Tyr Ile Thr Glu Leu Arg Arg Gln His Ala Arg Ala
705 710 715 720

Ser His Leu Gly Leu Ala Arg Ser Asn Leu Asp Glu Asp Ile Ile Ala
725 730 735

Glu Glu Asn Ile Val Ser Arg Ser Glu Phe Pro Glu Ser Trp Leu Trp
740 745 750

Asn Val Glu Asp Leu Lys Glu Pro Pro Lys Asn Gly Ile Ser Thr Lys
755 760 765

Leu Asn Asn Ile Phe Leu Lys Asp Ser Ile Thr Thr Trp Glu Ile Leu
770 775 780

Ala Val Ser Met Ser Asp Lys Lys Gly Ile Cys Val Ala Asp Pro Phe
785 790 795 800

Glu Val Thr Val Met Gln Asp Phe Phe Ile Asp Leu Arg Leu Pro Tyr
805 810 815

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

Tyr Arg Gln Asn Gln Glu Leu Lys Val Arg Val Glu Leu Leu His Asn
835 840 845

Pro Ala Phe Cys Ser Leu Ala Thr Thr Lys Arg Arg His Gln Gln Thr
850 855 860

Val Thr Ile Pro Pro Lys Ser Ser Leu Ser Val Pro Tyr Val Ile Val
865 870 875 880

Pro Leu Lys Thr Gly Leu Gln Glu Val Glu Val Lys Ala Ala Val Tyr
885 890 895

His His Phe Ile Ser Asp Gly Val Arg Lys Ser Leu Lys Val Val Pro
900 905 910

Glu Gly Ile Arg Met Asn Lys Thr Val Ala Val Arg Thr Leu Asp Pro
915 920 925

Glu Arg Leu Gly Arg Glu Gly Val Gln Lys Glu Asp Ile Pro Pro Ala
930 935 940

Asp Leu Ser Asp Gln Val Pro Asp Thr Glu Ser Glu Thr Arg Ile Leu
945 950 955 960

Leu Gln Gly Thr Pro Val Ala Gln Met Thr Glu Asp Ala Val Asp Ala
965 970 975

Glu Arg Leu Lys His Leu Ile Val Thr Pro Ser Gly Cys Gly Glu Gln
980 985 990

Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala Val His Tyr Leu Asp
995 1000 1005

Glu Thr Glu Gln Trp Glu Lys Phe Gly Leu Glu Lys Arg Gln Gly Ala
1010 1015 1020

Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln Leu Ala Phe Arg Gln
1025 1030 1035 1040

Pro Ser Ser Ala Phe Ala Ala Phe Val Lys Arg Ala Pro Ser Thr Trp
1045 1050 1055

Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu Ala Val Asn Leu Ile
1060 1065 1070

Ala Ile Asp Ser Gln Val Leu Cys Gly Ala Val Lys Trp Leu Ile Leu
1075 1080 1085

Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu Asp Ala Pro Val Ile
1090 1095 1100

His Gln Glu Met Ile Gly Gly Leu Arg Asn Asn Asn Glu Lys Asp Met
1105 1110 1115 1120

Ala Leu Thr Ala Phe Val Leu Ile Ser Leu Gln Glu Ala Lys Asp Ile
1125 1130 1135

Cys Glu Glu Gln Val Asn Ser Leu Pro Gly Ser Ile Thr Lys Ala Gly
1140 1145 1150

Asp Phe Leu Glu Ala Asn Tyr Met Asn Leu Gln Arg Ser Tyr Thr Val
1155 1160 1165

Ala Ile Ala Gly Tyr Ala Leu Ala Gln Met Gly Arg Leu Lys Gly Pro
1170 1175 1180

Leu Leu Asn Lys Phe Leu Thr Thr Ala Lys Asp Lys Asn Arg Trp Glu
1185 1190 1195 1200

Asp Pro Gly Lys Gln Leu Tyr Asn Val Glu Ala Thr Ser Tyr Ala Leu
1205 1210 1215

Leu Ala Leu Leu Gln Leu Lys Asp Phe Asp Phe Val Pro Pro Val Val
1220 1225 1230

Arg Trp Leu Asn Glu Gln Arg Tyr Tyr Gly Gly Gly Tyr Gly Ser Thr
1235 1240 1245

Gln Ala Thr Phe Met Val Phe Gln Ala Leu Ala Gln Tyr Gln Lys Asp
1250 1255 1260

Ala Pro Asp His Gln Glu Leu Asn Leu Asp Val Ser Leu Gln Leu Pro
1265 1270 1275 1280

Ser Arg Ser Ser Lys Ile Thr His Arg Ile His Trp Glu Ser Ala Ser
1285 1290 1295

Leu Leu Arg Ser Glu Glu Thr Lys Glu Asn Glu Gly Phe Thr Val Thr
1300 1305 1310

Ala Glu Gly Lys Gly Gln Gly Thr Leu Ser Val Val Thr Met Tyr His
1315 1320 1325

Ala Lys Ala Lys Asp Gln Leu Thr Cys Asn Lys Phe Asp Leu Lys Val
1330 1335 1340

Thr Ile Lys Pro Ala Pro Glu Thr Glu Lys Arg Pro Gln Asp Ala Lys
1345 1350 1355 1360

Asn Thr Met Ile Leu Glu Ile Cys Thr Arg Tyr Arg Gly Asp Gln Asp
1365 1370 1375

Ala Thr Met Ser Ile Leu Asp Ile Ser Met Met Thr Gly Phe Ala Pro
1380 1385 1390

Asp Thr Asp Asp Leu Lys Gln Leu Ala Asn Gly Val Asp Arg Tyr Ile
1395 1400 1405

Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser Asp Arg Asn Thr Leu Ile
1410 1415 1420

Ile Tyr Leu Asp Lys Val Ser His Ser Glu Asp Asp Cys Leu Ala Phe
1425 1430 1435 1440

Lys Val His Gln Tyr Phe Asn Val Glu Leu Ile Gln Pro Gly Ala Val
1445 1450 1455

Lys Val Tyr Ala Tyr Tyr Asn Leu Glu Glu Ser Cys Thr Arg Phe Tyr
1460 1465 1470

His Pro Glu Lys Glu Asp Gly Lys Leu Asn Lys Leu Cys Arg Asp Glu
1475 1480 1485

Leu Cys Arg Cys Ala Glu Glu Cys Phe Ile Gln Lys Ser Asp Asp Lys
1490 1495 1500

Val Thr Leu Glu Glu Arg Leu Asp Lys Ala Cys Glu Pro Gly Val Asp
1505 1510 1515 1520

Tyr Val Tyr Lys Thr Arg Leu Val Lys Val Gln Leu Ser Asn Asp Phe
1525 1530 1535

Asp Glu Tyr Ile Met Ala Ile Glu Gln Thr Ile Lys Ser Gly Ser Asp
1540 1545 1550

Glu Val Gln Val Gly Gln Gln Arg Thr Phe Ile Ser Pro Ile Lys Cys
1555 1560 1565

Arg Glu Ala Leu Lys Leu Glu Glu Lys Lys His Tyr Leu Met Trp Gly
1570 1575 1580

Leu Ser Ser Asp Phe Trp Gly Glu Lys Pro Asn Leu Ser Tyr Ile Ile
1585 1590 1595 1600

Gly Lys Asp Thr Trp Val Glu His Trp Pro Glu Glu Asp Glu Cys Gln
1605 1610 1615

Asp Glu Glu Asn Gln Lys Gln Cys Gln Asp Leu Gly Ala Phe Thr Glu
1620 1625 1630

Ser Met Val Val Phe Gly Cys Pro Asn
1635 1640

<210> 10
<211> 1639
<212> PRT
<213> Mus musculus

<400> 10
Ile Pro Met Tyr Ser Ile Ile Thr Pro Asn Val Leu Arg Leu Glu Ser
1 5 10 15

Glu Glu Thr Ile Val Leu Glu Ala His Asp Ala Gln Gly Asp Ile Pro
20 25 30

Val Thr Val Thr Val Gln Asp Phe Leu Lys Arg Gln Val Leu Thr Ser
35 40 45

Glu Lys Thr Val Leu Thr Gly Ala Ser Gly His Leu Arg Ser Val Ser
50 55 60

Ile Lys Ile Pro Ala Ser Lys Glu Phe Asn Ser Asp Lys Glu Gly His
65 70 75 80

Lys Tyr Val Thr Val Val Ala Asn Phe Gly Glu Thr Val Val Glu Lys
85 90 95

Ala Val Met Val Ser Phe Gln Ser Gly Tyr Leu Phe Ile Gln Thr Asp
100 105 110

Lys Thr Ile Tyr Thr Pro Gly Ser Thr Val Leu Tyr Arg Ile Phe Thr
115 120 125

Val Asp Asn Asn Leu Leu Pro Val Gly Lys Thr Val Val Ile Leu Ile
130 135 140

Glu Thr Pro Asp Gly Ile Pro Val Lys Arg Asp Ile Leu Ser Ser Asn
145 150 155 160

Asn Gln His Gly Ile Leu Pro Leu Ser Trp Asn Ile Pro Glu Leu Val
165 170 175

Asn Met Gly Gln Trp Lys Ile Arg Ala Phe Tyr Glu His Ala Pro Lys
180 185 190

```
Gln Ile Phe Ser Ala Glu Phe Glu Val Lys Glu Tyr Val Leu Pro Ser
        195                 200                 205

Phe Glu Val Arg Val Glu Pro Thr Glu Thr Phe Tyr Tyr Ile Asp Asp
    210                 215                 220

Pro Asn Gly Leu Glu Val Ser Ile Ile Ala Lys Phe Leu Tyr Gly Lys
225                 230                 235                 240

Asn Val Asp Gly Thr Ala Phe Val Ile Phe Gly Val Gln Asp Gly Asp
                245                 250                 255

Lys Lys Ile Ser Leu Ala His Ser Leu Thr Arg Val Val Ile Glu Asp
            260                 265                 270

Gly Val Gly Asp Ala Val Leu Thr Arg Lys Val Leu Met Glu Gly Val
        275                 280                 285

Arg Pro Ser Asn Ala Asp Ala Leu Val Gly Lys Ser Leu Tyr Val Ser
    290                 295                 300

Val Thr Val Ile Leu His Ser Gly Ser Asp Met Val Glu Ala Glu Arg
305                 310                 315                 320

Ser Gly Ile Pro Ile Val Thr Ser Pro Tyr Gln Ile His Phe Thr Lys
                325                 330                 335

Thr Pro Lys Phe Phe Lys Pro Ala Met Pro Phe Asp Leu Met Val Phe
            340                 345                 350

Val Thr Asn Pro Asp Gly Ser Pro Ala Ser Lys Val Leu Val Val Thr
        355                 360                 365

Gln Gly Ser Asn Ala Lys Ala Leu Thr Gln Asp Asp Gly Val Ala Lys
    370                 375                 380

Leu Ser Ile Asn Thr Pro Asn Ser Arg Gln Pro Leu Thr Ile Thr Val
385                 390                 395                 400

Arg Thr Lys Lys Asp Thr Leu Pro Glu Ser Arg Gln Ala Thr Lys Thr
                405                 410                 415

Met Glu Ala His Pro Tyr Ser Thr Met His Asn Ser Asn Asn Tyr Leu
            420                 425                 430

His Leu Ser Val Ser Arg Met Glu Leu Lys Pro Gly Asp Asn Leu Asn
        435                 440                 445

Val Asn Phe His Leu Arg Thr Asp Pro Gly His Glu Ala Lys Ile Arg
    450                 455                 460

Tyr Tyr Thr Tyr Leu Val Met Asn Lys Gly Lys Leu Leu Lys Ala Gly
465                 470                 475                 480

Arg Gln Val Arg Glu Pro Gly Gln Asp Leu Val Val Leu Ser Leu Pro
                485                 490                 495

Ile Thr Pro Glu Phe Ile Pro Ser Phe Arg Leu Val Ala Tyr Tyr Thr
            500                 505                 510

Leu Ile Gly Ala Ser Gly Gln Arg Glu Val Val Ala Asp Ser Val Trp
        515                 520                 525

Val Asp Val Lys Asp Ser Cys Ile Gly Thr Leu Val Val Lys Gly Asp
    530                 535                 540

Pro Arg Asp Asn His Leu Ala Pro Gly Gln Gln Thr Thr Leu Arg Ile
545                 550                 555                 560

Glu Gly Asn Gln Gly Ala Arg Val Gly Leu Val Ala Val Asp Lys Gly
                565                 570                 575

Val Phe Val Leu Asn Lys Lys Asn Lys Leu Thr Gln Ser Lys Ile Trp
            580                 585                 590

Asp Val Val Glu Lys Ala Asp Ile Gly Cys Thr Pro Gly Ser Gly Lys
```

595 600 605

Asn Tyr Ala Gly Val Phe Met Asp Ala Gly Leu Ala Phe Lys Thr Ser
610 615 620

Gln Gly Leu Gln Thr Glu Gln Arg Ala Asp Leu Glu Cys Thr Lys Pro
625 630 635 640

Ala Ala Arg Arg Arg Arg Ser Val Gln Leu Met Glu Arg Arg Met Asp
645 650 655

Lys Ala Gly Gln Tyr Thr Asp Lys Gly Leu Arg Lys Cys Cys Glu Asp
660 665 670

Gly Met Arg Asp Ile Pro Met Arg Tyr Ser Cys Gln Arg Arg Ala Arg
675 680 685

Leu Ile Thr Gln Gly Glu Asn Cys Ile Lys Ala Phe Ile Asp Cys Cys
690 695 700

Asn His Ile Thr Lys Leu Arg Glu Gln His Arg Arg Asp His Val Leu
705 710 715 720

Gly Leu Ala Arg Ser Glu Leu Glu Glu Asp Ile Ile Pro Glu Glu Asp
725 730 735

Ile Ile Ser Arg Ser His Phe Pro Gln Ser Trp Leu Trp Thr Ile Glu
740 745 750

Glu Leu Lys Glu Pro Glu Lys Asn Gly Ile Ser Thr Lys Val Met Asn
755 760 765

Ile Phe Leu Lys Asp Ser Ile Thr Thr Trp Glu Ile Leu Ala Val Ser
770 775 780

Leu Ser Asp Lys Lys Gly Ile Cys Val Ala Asp Pro Tyr Glu Ile Arg
785 790 795 800

Val Met Gln Asp Phe Phe Ile Asp Leu Arg Leu Pro Tyr Ser Val Val
805 810 815

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

Gln Glu Glu Leu Lys Val Arg Val Glu Leu Leu His Asn Pro Ala Phe
835 840 845

Cys Ser Met Ala Thr Ala Lys Asn Arg Tyr Phe Gln Thr Ile Lys Ile
850 855 860

Pro Pro Lys Ser Ser Val Ala Val Pro Tyr Val Ile Val Pro Leu Lys
865 870 875 880

Ile Gly Gln Gln Glu Val Glu Val Lys Ala Ala Val Phe Asn His Phe
885 890 895

Ile Ser Asp Gly Val Lys Lys Thr Leu Lys Val Val Pro Glu Gly Met
900 905 910

Arg Ile Asn Lys Thr Val Ala Ile His Thr Leu Asp Pro Glu Lys Leu
915 920 925

Gly Gln Gly Gly Val Gln Lys Val Asp Val Pro Ala Ala Asp Leu Ser
930 935 940

Asp Gln Val Pro Asp Thr Asp Ser Glu Thr Arg Ile Ile Leu Gln Gly
945 950 955 960

Ser Pro Val Val Gln Met Ala Glu Asp Ala Val Asp Gly Glu Arg Leu
965 970 975

Lys His Leu Ile Val Thr Pro Ala Gly Cys Gly Glu Gln Asn Met Ile
980 985 990

Gly Met Thr Pro Thr Val Ile Ala Val His Tyr Leu Asp Gln Thr Glu
995 1000 1005

Gln Trp Glu Lys Phe Gly Ile Glu Lys Arg Gln Glu Ala Leu Glu Leu
1010 1015 1020

Ile Lys Lys Gly Tyr Thr Gln Gln Leu Ala Phe Lys Gln Pro Ser Ser
1025 1030 1035 1040

Ala Tyr Ala Ala Phe Asn Asn Arg Pro Pro Ser Thr Trp Leu Thr Ala
1045 1050 1055

Tyr Val Val Lys Val Phe Ser Leu Ala Ala Asn Leu Ile Ala Ile Asp
1060 1065 1070

Ser His Val Leu Cys Gly Ala Val Lys Trp Leu Ile Leu Glu Lys Gln
1075 1080 1085

Lys Pro Asp Gly Val Phe Gln Glu Asp Gly Pro Val Ile His Gln Glu
1090 1095 1100

Met Ile Gly Gly Phe Arg Asn Ala Lys Glu Ala Asp Val Ser Leu Thr
1105 1110 1115 1120

Ala Phe Val Leu Ile Ala Leu Gln Glu Ala Arg Asp Ile Cys Glu Gly
1125 1130 1135

Gln Val Asn Ser Leu Pro Gly Ser Ile Asn Lys Ala Gly Glu Tyr Ile
1140 1145 1150

Glu Ala Ser Tyr Met Asn Leu Gln Arg Pro Tyr Thr Val Ala Ile Ala
1155 1160 1165

Gly Tyr Ala Leu Ala Leu Met Asn Lys Leu Glu Glu Pro Tyr Leu Gly
1170 1175 1180

Lys Phe Leu Asn Thr Ala Lys Asp Arg Asn Arg Trp Glu Glu Pro Asp
1185 1190 1195 1200

Gln Gln Leu Tyr Asn Val Glu Ala Thr Ser Tyr Ala Leu Leu Ala Leu
1205 1210 1215

Leu Leu Leu Lys Asp Phe Asp Ser Val Pro Pro Val Val Arg Trp Leu
1220 1225 1230

Asn Glu Gln Arg Tyr Tyr Gly Gly Gly Tyr Gly Ser Thr Gln Ala Thr
1235 1240 1245

Phe Met Val Phe Gln Ala Leu Ala Gln Tyr Gln Thr Asp Val Pro Asp
1250 1255 1260

His Lys Asp Leu Asn Met Asp Val Ser Phe His Leu Pro Ser Arg Ser
1265 1270 1275 1280

Ser Ala Thr Thr Phe Arg Leu Leu Trp Glu Asn Gly Asn Leu Leu Arg
1285 1290 1295

Ser Glu Glu Thr Lys Gln Asn Glu Ala Phe Ser Leu Thr Ala Lys Gly
1300 1305 1310

Lys Gly Arg Gly Thr Leu Ser Val Val Ala Val Tyr His Ala Lys Leu
1315 1320 1325

Lys Ser Lys Val Thr Cys Lys Lys Phe Asp Leu Arg Val Ser Ile Arg
1330 1335 1340

Pro Ala Pro Glu Thr Ala Lys Lys Pro Glu Glu Ala Lys Asn Thr Met
1345 1350 1355 1360

Phe Leu Glu Ile Cys Thr Lys Tyr Leu Gly Asp Val Asp Ala Thr Met
1365 1370 1375

Ser Ile Leu Asp Ile Ser Met Met Thr Gly Phe Ala Pro Asp Thr Lys
1380 1385 1390

Asp Leu Glu Leu Leu Ala Ser Gly Val Asp Arg Tyr Ile Ser Lys Tyr
1395 1400 1405

Glu Met Asn Lys Ala Phe Ser Asn Lys Asn Thr Leu Ile Ile Tyr Leu
1410 1415 1420

Glu Lys Ile Ser His Thr Glu Glu Asp Cys Leu Thr Phe Lys Val His
1425 1430 1435 1440

Gln Tyr Phe Asn Val Gly Leu Ile Gln Pro Gly Ser Val Lys Val Tyr
1445 1450 1455

Ser Tyr Tyr Asn Leu Glu Glu Ser Cys Thr Arg Phe Tyr His Pro Glu
1460 1465 1470

Lys Asp Asp Gly Met Leu Ser Lys Leu Cys His Ser Glu Met Cys Arg
1475 1480 1485

Cys Ala Glu Glu Asn Cys Phe Met Gln Gln Ser Gln Glu Lys Ile Asn
1490 1495 1500

Leu Asn Val Arg Leu Asp Lys Ala Cys Glu Pro Gly Val Asp Tyr Val
1505 1510 1515 1520

Tyr Lys Thr Glu Leu Thr Asn Ile Lys Leu Leu Asp Asp Phe Asp Glu
1525 1530 1535

Tyr Thr Met Thr Ile Gln Gln Val Ile Lys Ser Gly Ser Asp Glu Val
1540 1545 1550

Gln Ala Gly Gln Gln Arg Lys Phe Ile Ser His Ile Lys Cys Arg Asn
1555 1560 1565

Ala Leu Lys Leu Gln Lys Gly Lys Lys Tyr Leu Met Trp Gly Leu Ser
1570 1575 1580

Ser Asp Leu Trp Gly Glu Lys Pro Asn Thr Ser Tyr Ile Ile Gly Lys
1585 1590 1595 1600

Asp Thr Trp Val Glu His Trp Pro Glu Ala Glu Glu Cys Gln Asp Gln
1605 1610 1615

Lys Tyr Gln Lys Gln Cys Glu Glu Leu Gly Ala Phe Thr Glu Ser Met
1620 1625 1630

Val Val Tyr Gly Cys Pro Asn
1635

<210> 11
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 11
Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Ala
1 5 10

<210> 12
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 12
Gly Ala Ser Ser Arg Ala Ser
1 5

<210> 13
<211> 214

<212> PRT
<213> Homo sapiens

<400> 13
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

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

Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

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

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 14
<211> 449
<212> PRT
<213> Homo sapiens

<400> 14
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ser Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
115 120 125

```
Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Asp
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp
    210                 215                 220

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225                 230                 235                 240

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
                245                 250                 255

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
            260                 265                 270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
        275                 280                 285

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
    290                 295                 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305                 310                 315                 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
                325                 330                 335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
            340                 345                 350

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
        355                 360                 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
    370                 375                 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
385                 390                 395                 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
                405                 410                 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
            420                 425                 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
        435                 440                 445

Gly
```

<210> 15
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 15
Arg Gln Asn Gln Glu Leu Lys

1 5

<210> 16
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 16
Tyr His His Phe Ile
1 5

<210> 17
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 17
Thr Ser Ser Ser
1

<210> 18
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 18
Arg Asn Ala Leu Tyr Gly Ser Gly Gly Tyr
1 5 10

<210> 19
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic 6x His tag

<400> 19
His His His His His His
1 5