```
PMP1C2          qvqlvesggg lvqpggslrl scaasGFTFS D.....YWMY wvrqapgkgl  class I
PMP1G11         qvqlqesggg mvqpggslrl scaasGFDFG V.....SWMY wvrqapgkgl
PMP1H6          evqlvesggg lvqpggslrl scatsGFDFS V.....SWMY wvrqapgkgl
PMP3D10         qvqlvesggg lvqaggslsl scaasGRSFT G.....YYMG wfrqapgker  class III
PMP5F10         evqlvesggg lvqaggslsl scsasGRSLS N.....YYMG wfrqapgker
PMP1G5          qvqlvesggg lvqaggslrl scaasGRTFS EPSGYTYTIG wfrqapgker  class II
PMP1H2          qvkleesggg lvqpgdslrl scaasGRTFS DYSGYTYTVG wfrqapgker
PMP3G2          avqlvesggg lvqpgdslrl scaasGRTFS DYSGYTYTVG wfrqapgker
PMP1D2          avqlvdsggg lvqaggslrl scaasGRTFS AHSV..YTMG wfrqapgker  class IIb

PMP1C2          ewvseINTNG LITKYPDSVK Grftisrdna kntlylqmns lkpedtalyy
PMP1G11         ewvseINTNG LITKYPDSVK Grftisrdna kttlylqmns lkpedtalyy
PMP1H6          ewvseINTNG LITKYVDSVK Grftisrdna kntlylqmds lipedtalyy
PMP3D10         qllasISWRG DNTYYKESVK Grftisrdda kntiylqmns lkpedtavyy
PMP5F10         ellgnISWRG YNIYYKDSVK Grftisrdda kntiylqmnr lkpedtavyy
PMP1G5          efvarIYWSS GLTYYADSVK Grftisrdia kntvdllmns lkpedtavyy
PMP1H2          efvarIYWSS GNTYYADSVK Grftisrdia kntvdllmnn lepedtavyy
PMP3G2          efvarIYWSS GNTYYADSVK Grftisrdia kntvdllmnn lepedtavyy
PMP1D2          efvarIYWSS ANTYYADSVK Grftisrdna kntvdllmnc lkpedtavyy

PMP1C2          carS...... ...PSGFNrg qgtqvtvss
PMP1G11         carS...... ...PSGSFrg qgtqvtvss
PMP1H6          carS...... ...PSGSFrg qgtqvtvss
PMP3D10         caaS.ILPLS DDPGWNTNwg qgtqvtvss
PMP5F10         caaS.ILPLS DDPGWNTYwg qgtqvtvss
PMP1G5          caaRDGIPTS RSVGSYNYwg qgtqvtvss
PMP1H2          caaRDGIPTS RSVESYNYwg qgtqvtvss
PMP3G2          caaRDGIPTS RSVESYNYwg qgtqvtvss
PMP1D2          caaRDGIPTS RSVEAYNYwg qgtqvtvss
```

Figure 1

```
Hum+, Rhe+, Mou+ > PMP6G8    avqlvesggg lvqpggslrl tctasGFTFR SFGMSwvrqa pgkdqewvsa A
Hum+, Rhe+, Mou- > PMP6A5    qvqlaesggg lvqpggslrl tctasGFTFG SFGMSwvrqa pgeglewvsa
Hum+, Rhe+, Mou+ > PMP6A6    avqlvesggg lvqpgnslrl scaasGFTFR SFGMSwvrqa pgkepewvss B
Hum+, Rhe+, Mou+ > PMP6C1    avqlvdsggg lvqpggslrl scaasGFSFG SFGMSwvrqy pgkepewvss
Hum+, Rhe+, Mou+ > PMP6A8    avqlvesggg lvqgggslrl acaasERIFD LNLMGwyrqg pgnerelvat C
Hum+, Rhe+, Mou+ > PMP6B4    evqlvesggg lvqeggslrl acaasERIWD INLLGwyrqg pgnerelvat
Hum+, Rhe-, Mou- > PMP6G7    qvqlvesggg lvqpggslrl scaasGFTFS NYWMYwvrva pgkglerisr D

PMP6G8                         ISADSSTKNY ADSVKGrfti srdnakkmly lemnslkped tavyycviGR
PMP6A5                         ISADSSDKRY ADSVKGrfti srdnakkmly lemnslksed tavyycviGR
PMP6A6                         ISGSGSDTLY ADSVKGrfti srdnakttly lqmnslkped tavyyctiGG
PMP6C1                         INGRGDDTRY ADSVKGrfsi srdnakntly lqmnslkped taeyyctiGR
PMP6A8                         ITVG.DSTNY ADSVKGrfti smdytkqtvy lhmnslrped tglyyckiRR
PMP6B4                         ITVG.DSTSY ADSVKGrfti srdydkntly lqmnslrped tglyyckiRR
PMP6G7                         ISTGGGYSYY ADSVKGrfti srdnakntly lqmnslkped talyycakDR

PMP6G8                         GSPs...... ..spgtqvtv ss
PMP6A5                         GSPa...... ..sqgtqvtv ss
PMP6A6                         SLSRs..... ..sqgtqvtv ss
PMP6C1                         SVSRS..... .rtqgtqvtv ss
PMP6A8                         TWHSEL.... .wgqgtqvtv ss
PMP6B4                         TWHSEL.... .wgqgtqvtv ss
PMP6G7                         EAQVDTLDFD Yrgqgtqvtv ss
```

Figure 2

Screening of albumin specific nanobodies versus human SA

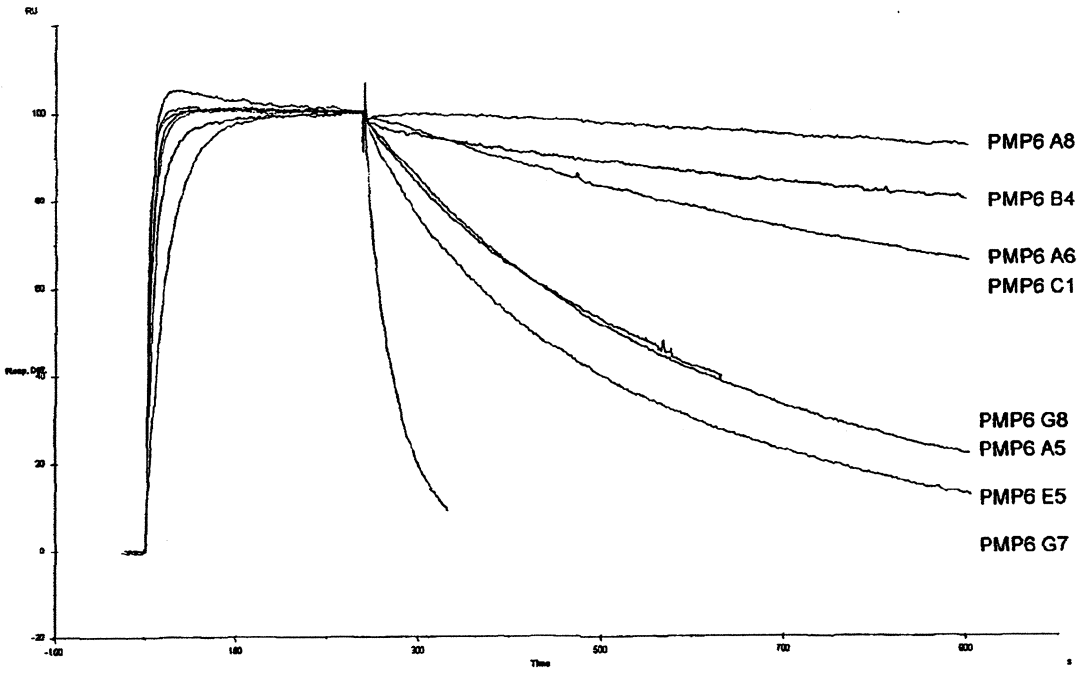


Figure 3

Screening of albumin specific nanobodies versus rhesus SA

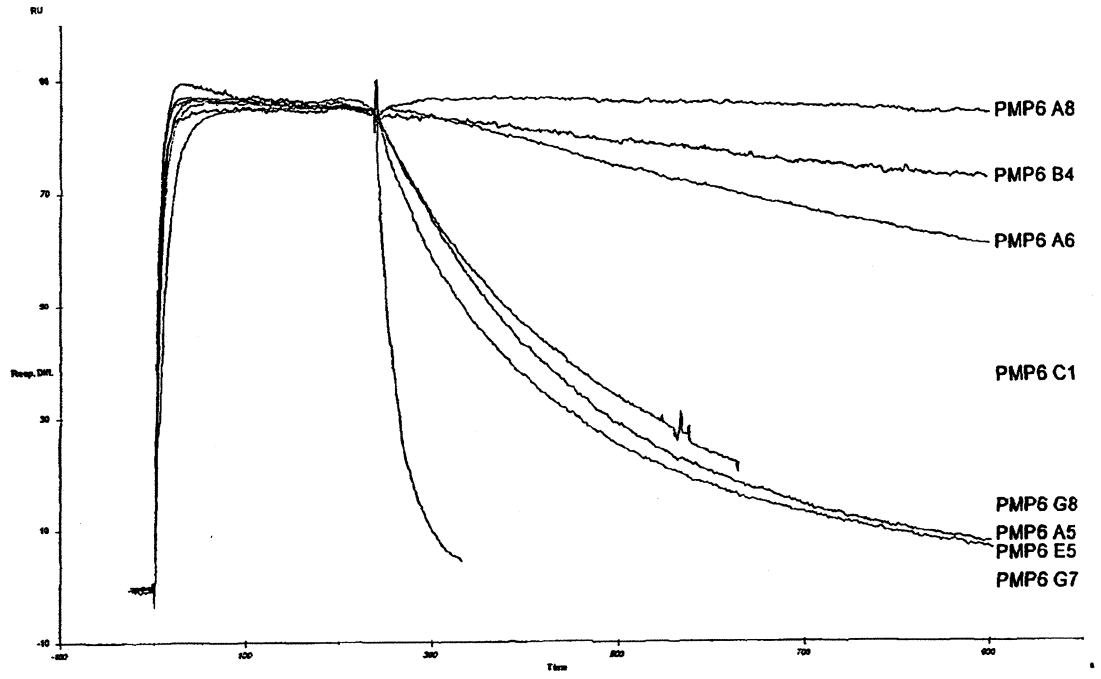


Figure 4

Screening of albumin specific nanobodies versus mouse SA

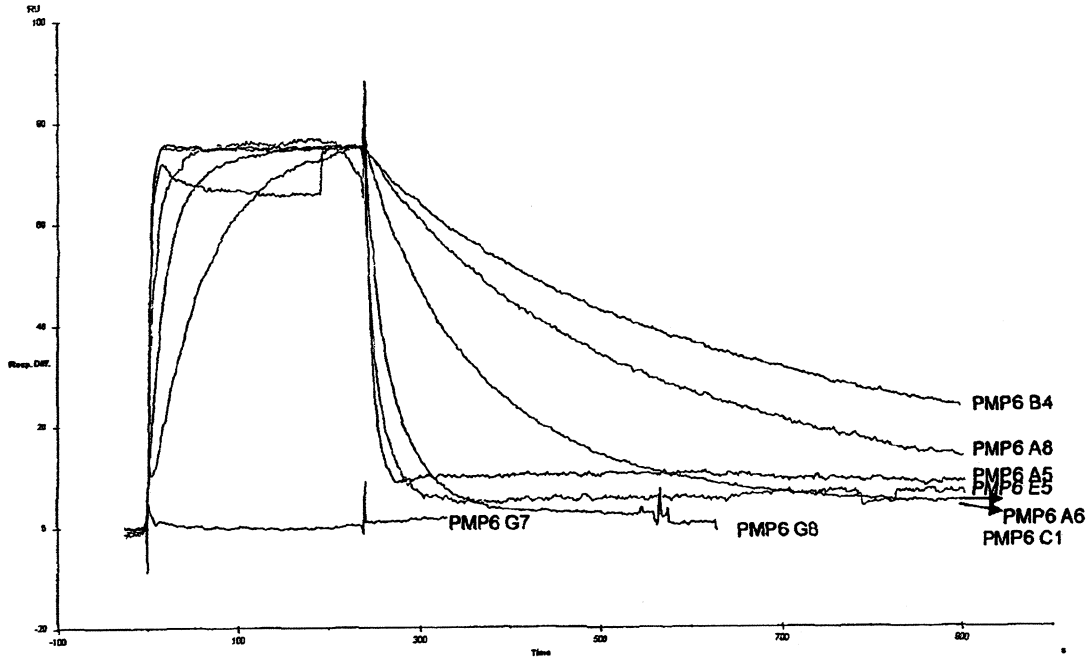


Figure 5

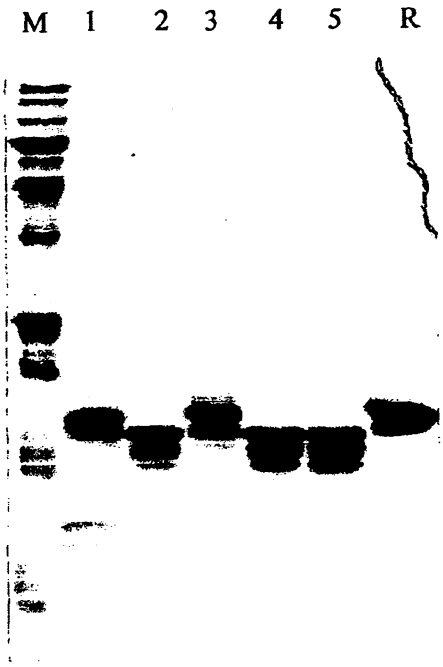
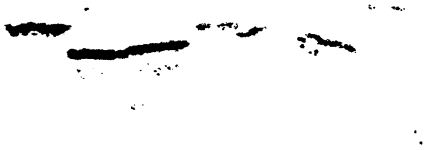


Figure 6

Anti-myc

R 5 4 3 2 1



1: TNF2
2: TNF1
3: TNF3
4: ALB1
5: ALB2
R: 100ng of reference nanobody

Anti-Nanobodies

R 5 4 3 2 1



Figure 7

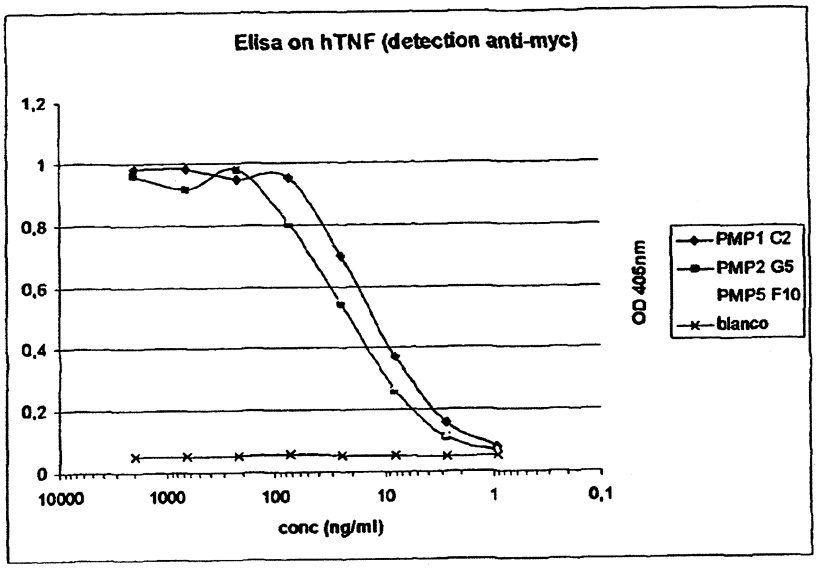


Figure 8

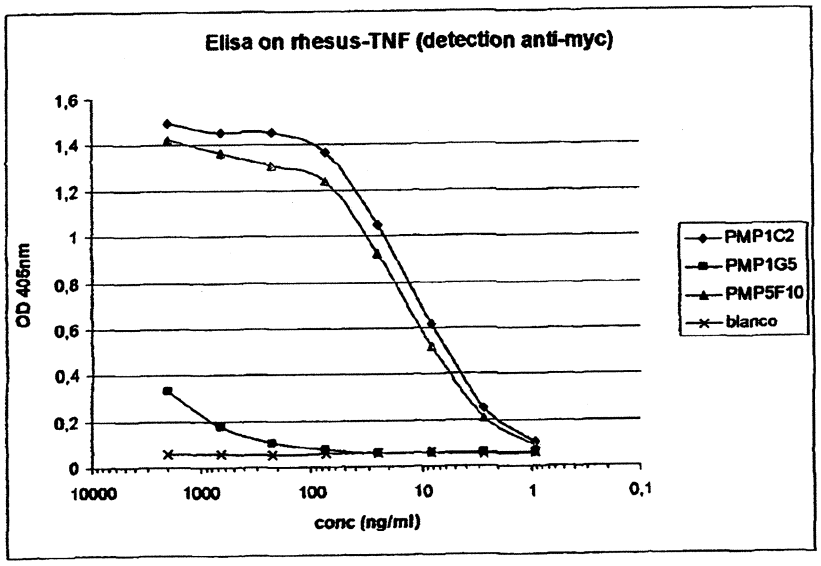


Figure 9

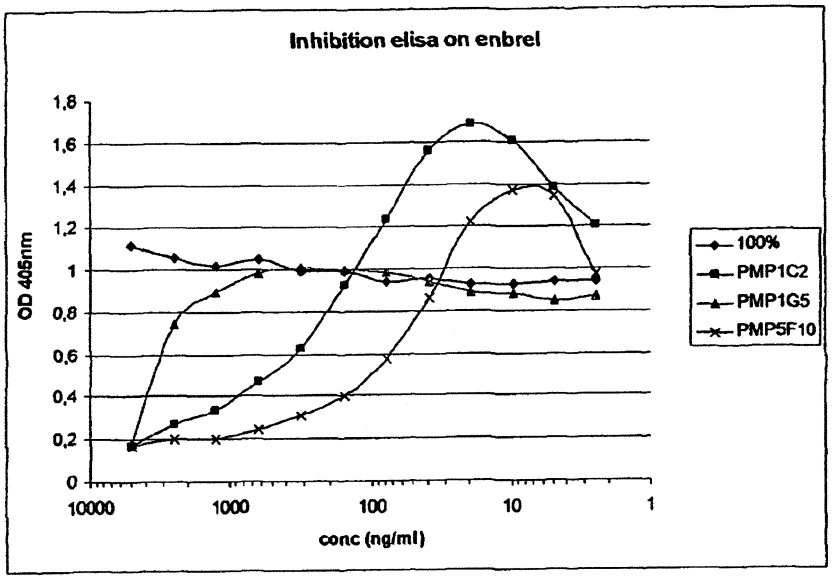


Figure 10

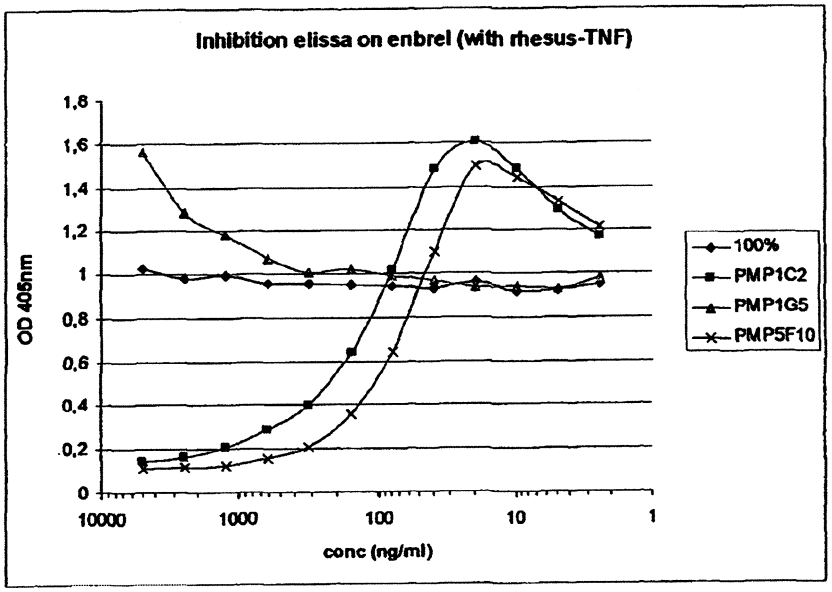


Figure 11

PMP1 C2, PMP1 G5 & PMP5 F10 versus human TNF (normalized data)

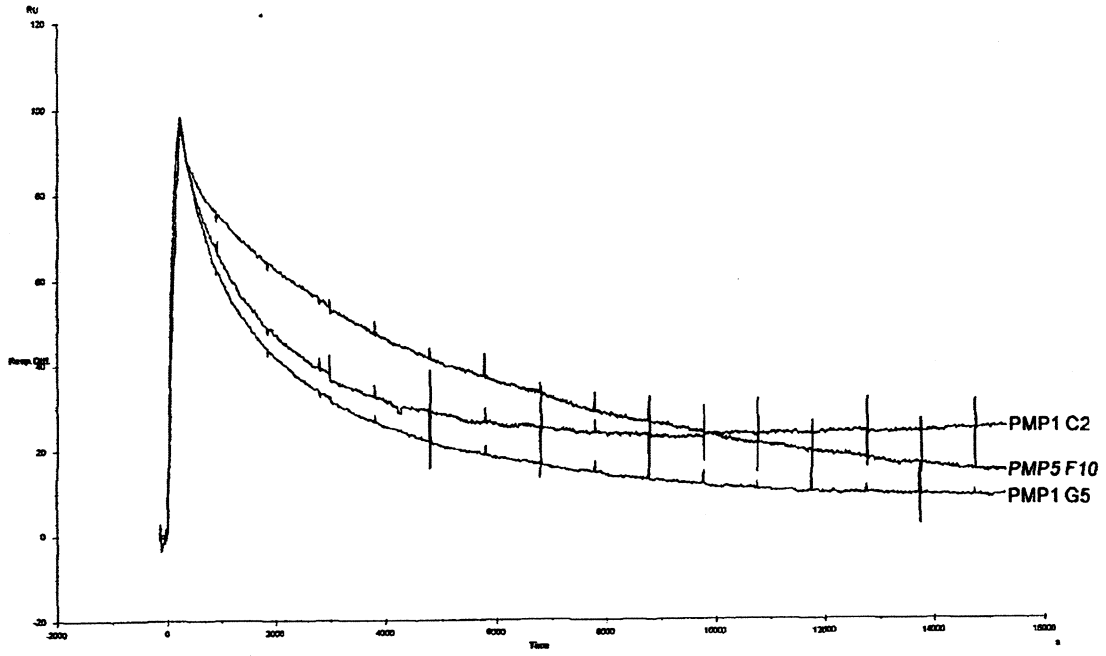


Figure 12

PMP1 C2, PMP1 G5 & PMP5 F10 versus rhesus TNF (normalized data)

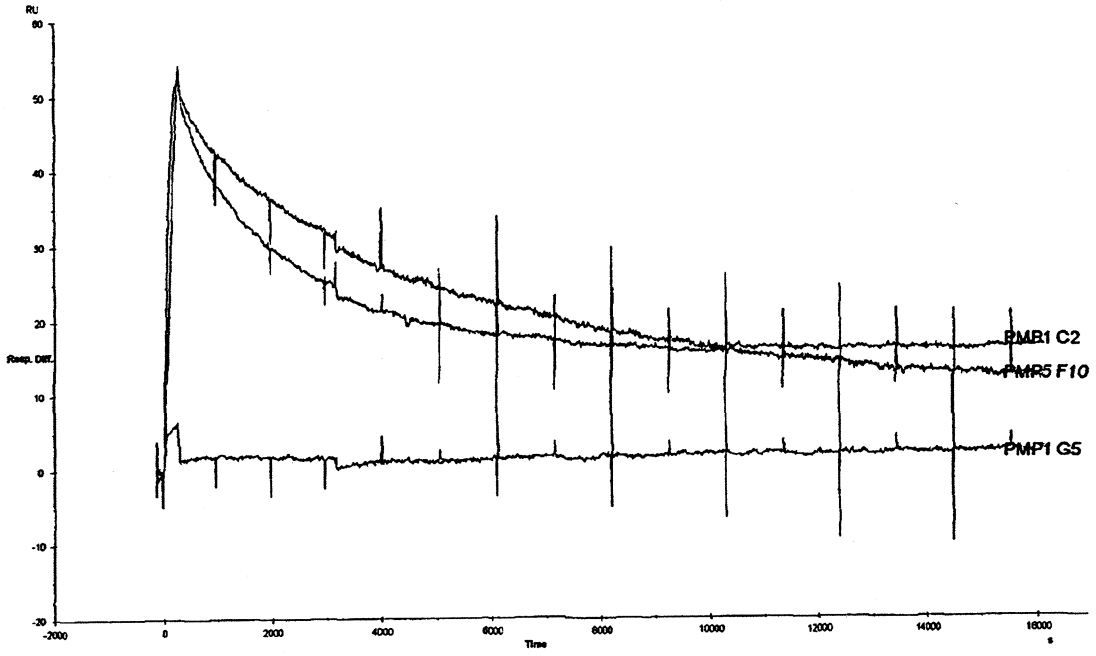


Figure 13

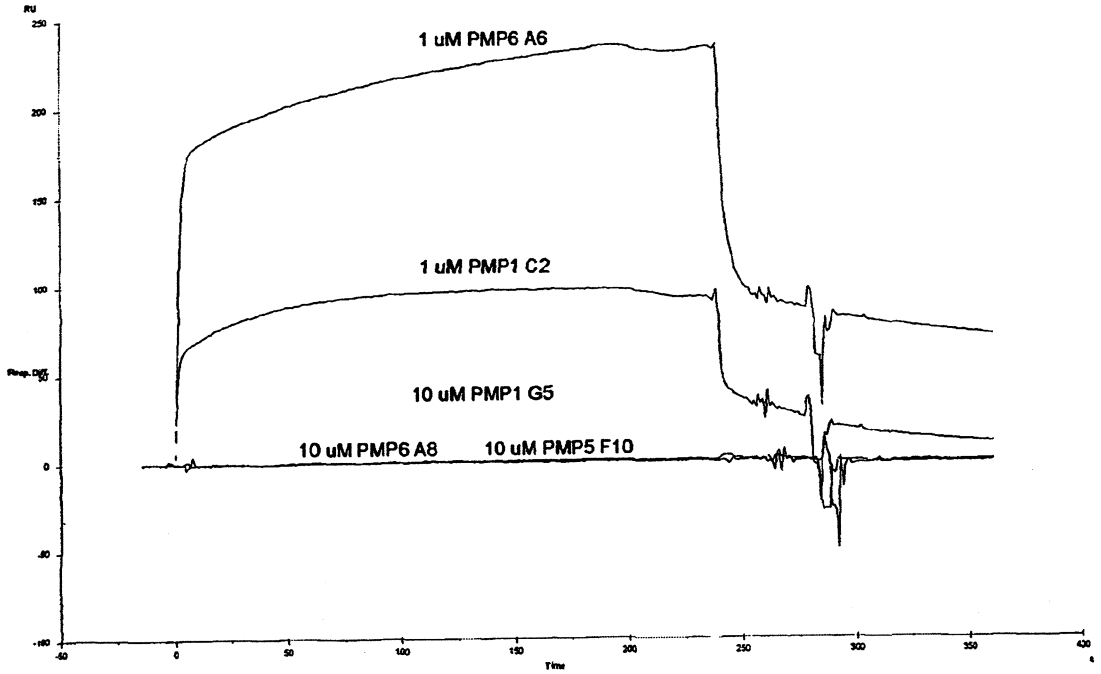

RU
250
200
150
100
50
0
-50
-100
1 uM PMP6 A6
1 uM PMP1 C2
10 uM PMP1 G5
10 uM PMP6 A8
10 uM PMP5 F10
-50
0
50
100
150
200
250
300
350
400
Time

Figure 14

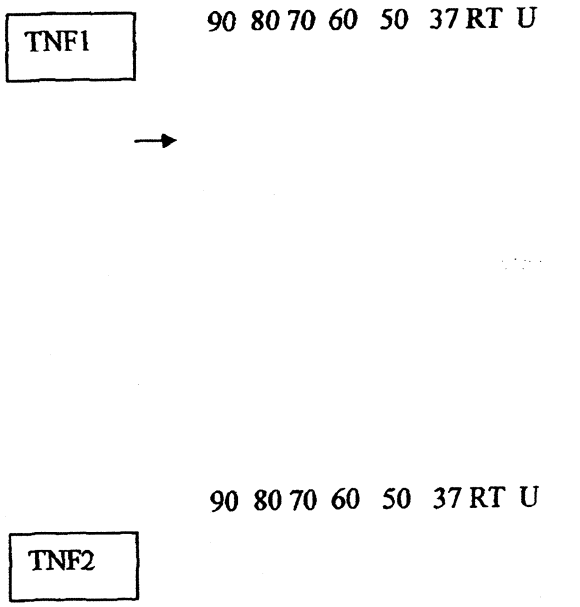

TNF1
90 80 70 60 50 37 RT U
TNF2
90 80 70 60 50 37 RT U
TNF3
90 80 70 60 50 37 RT U

Figure 15

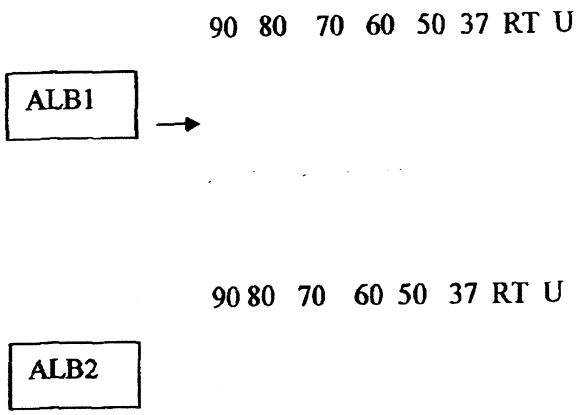
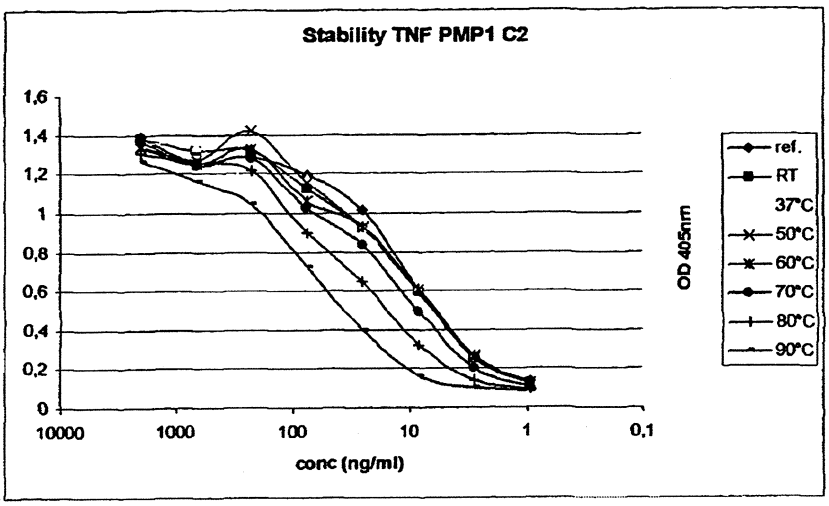
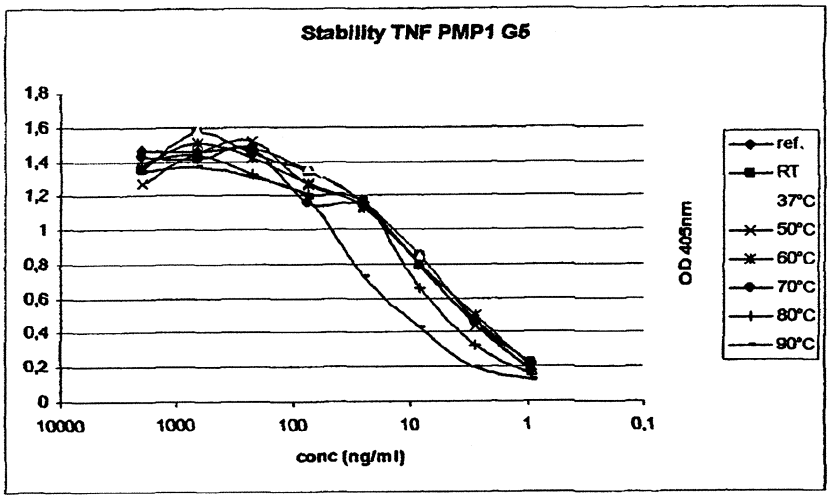


Figure 15 - continued


Stability TNF PMP1 C2
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
OD 405nm
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C


Stability TNF PMP1 G5
1,8
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
OD 405nm
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

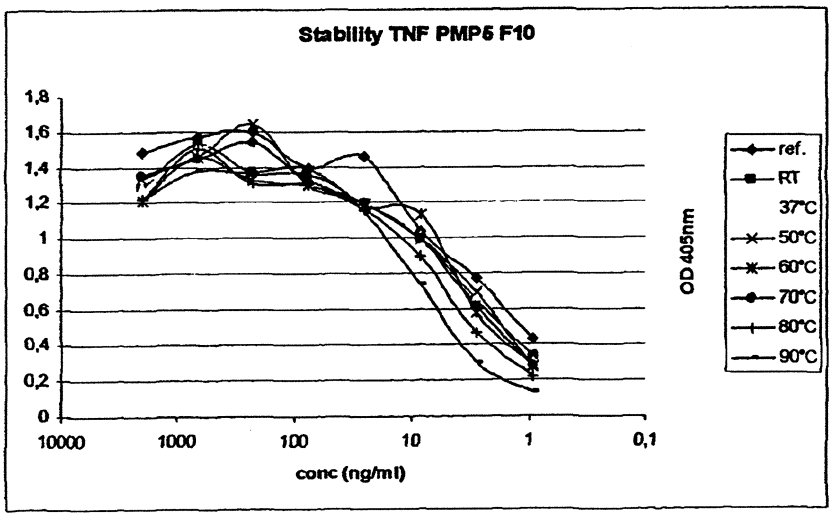
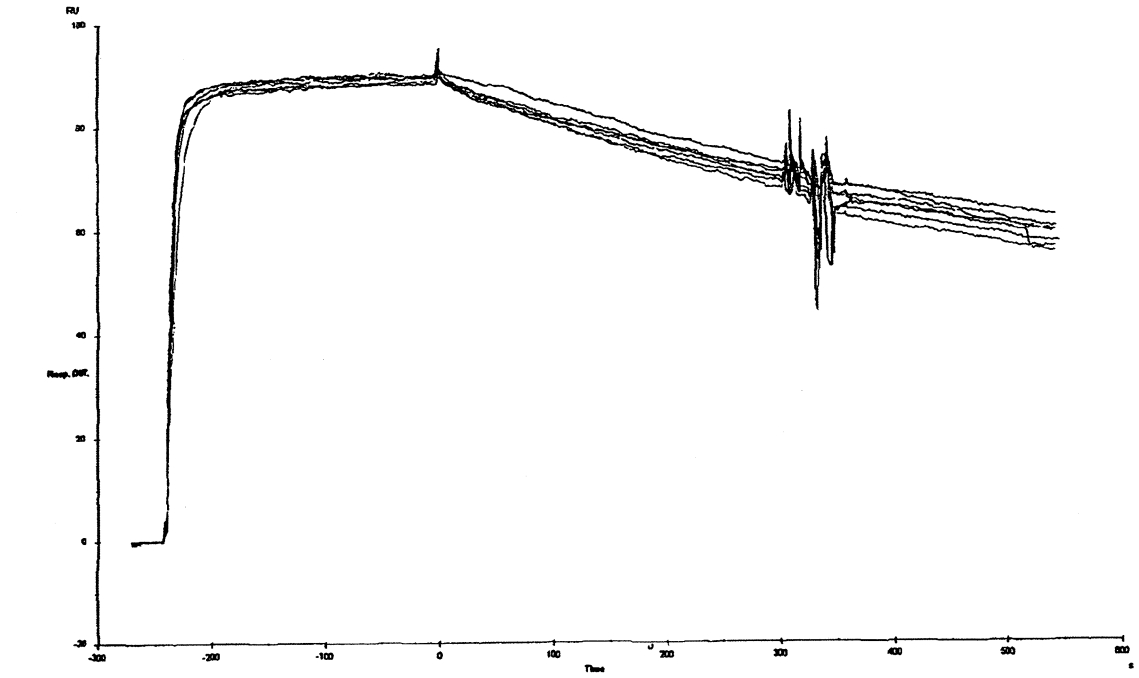

Stability TNF PMP5 F10
1,8
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
OD 405nm
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

Figure 16



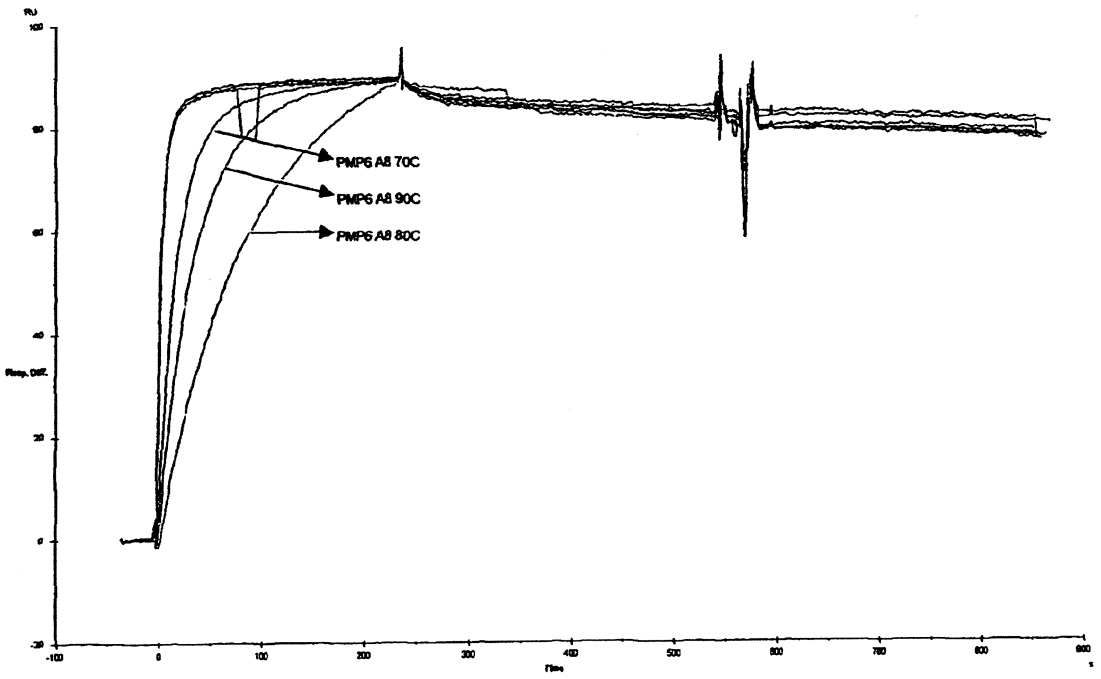


Figure 17

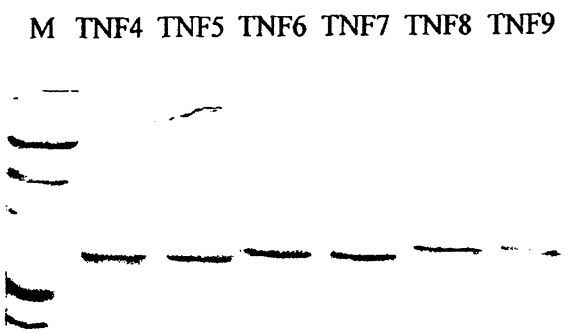


Figure 18

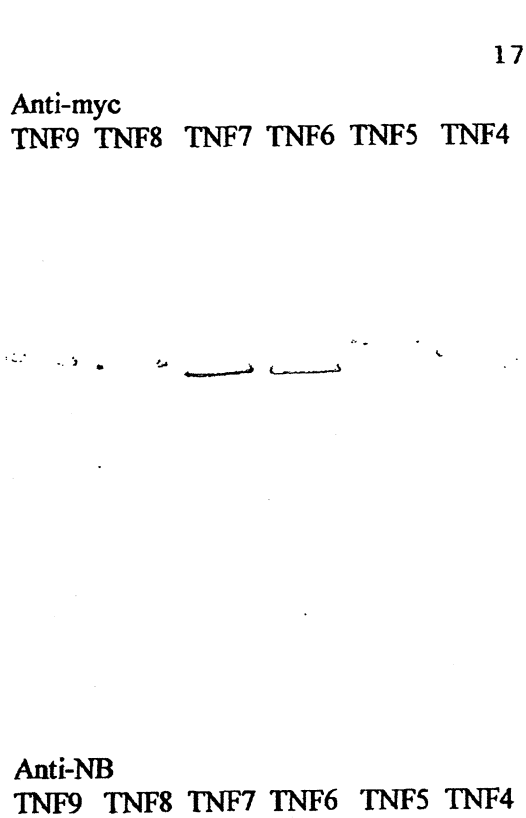

Anti-myc
TNF9 TNF8 TNF7 TNF6 TNF5 TNF4
Anti-NB
TNF9 TNF8 TNF7 TNF6 TNF5 TNF4

Figure 19

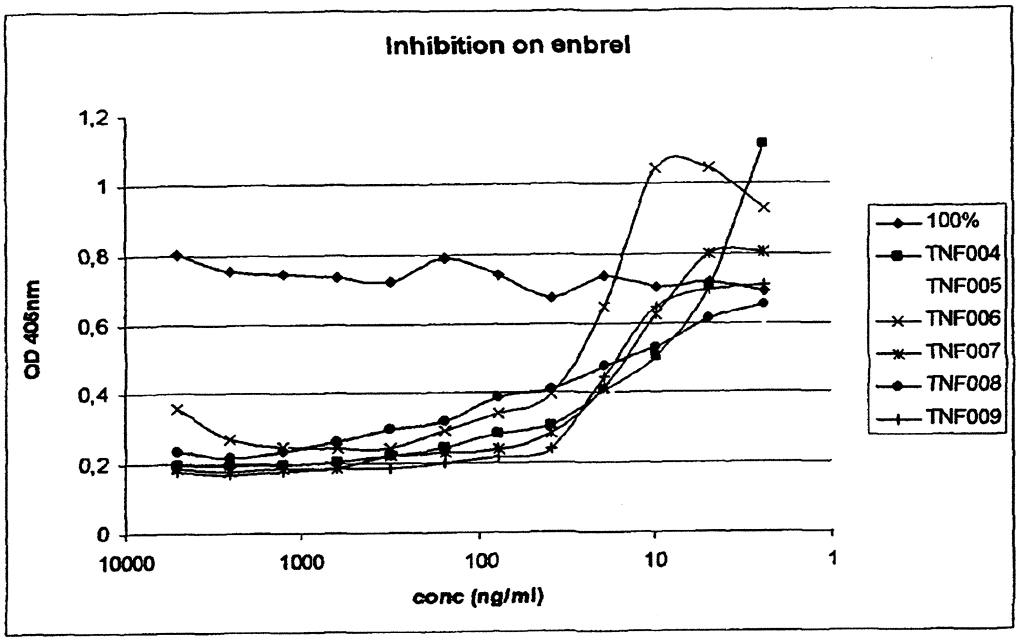
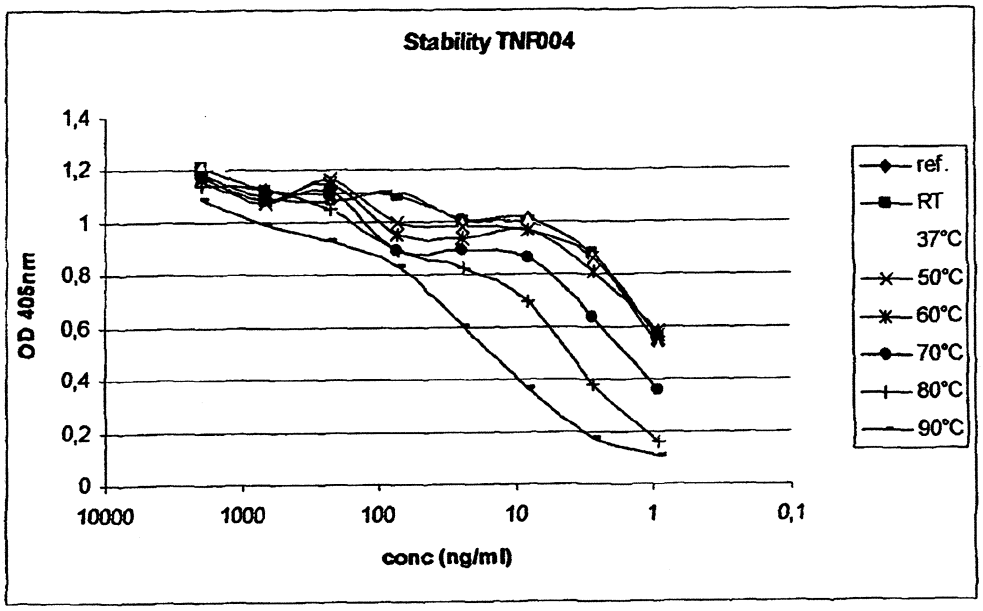

Inhibition on enbrel
OD 405nm
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
conc (ng/ml)
100%
TNF004
TNF005
TNF006
TNF007
TNF008
TNF009

Figure 20


Stability TNF004
OD 405nm
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

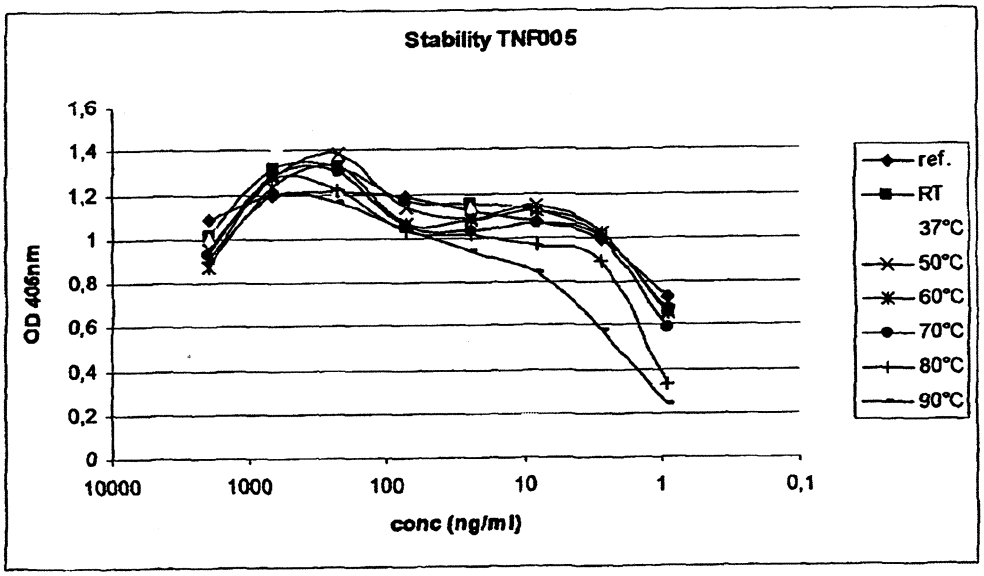
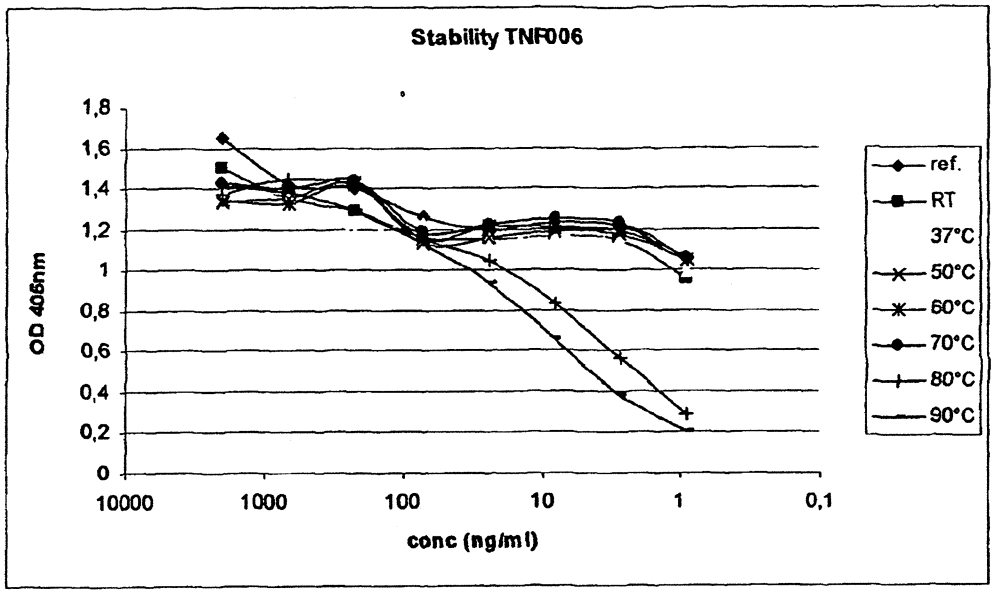

Stability TNF005
OD 405nm
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

Figure 21



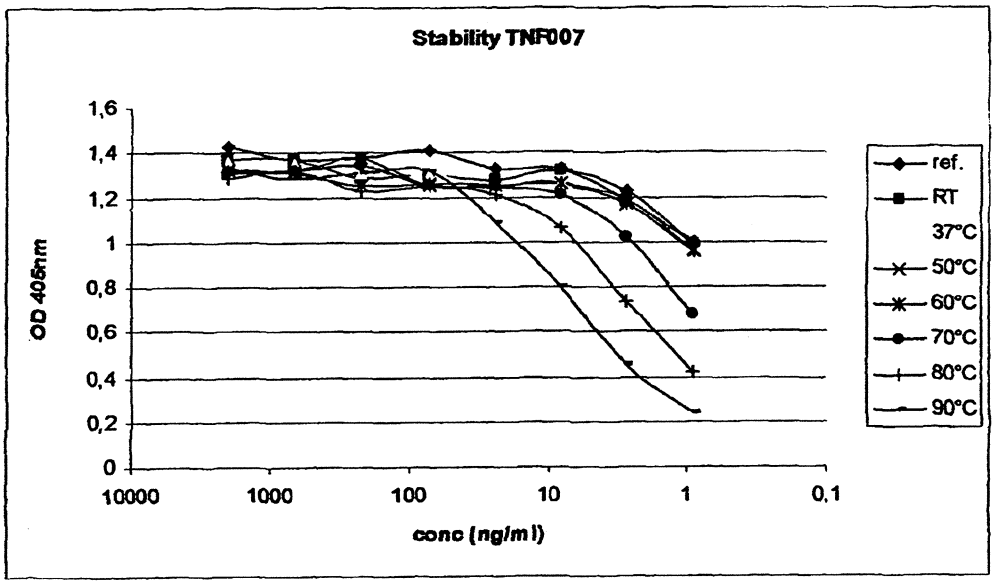
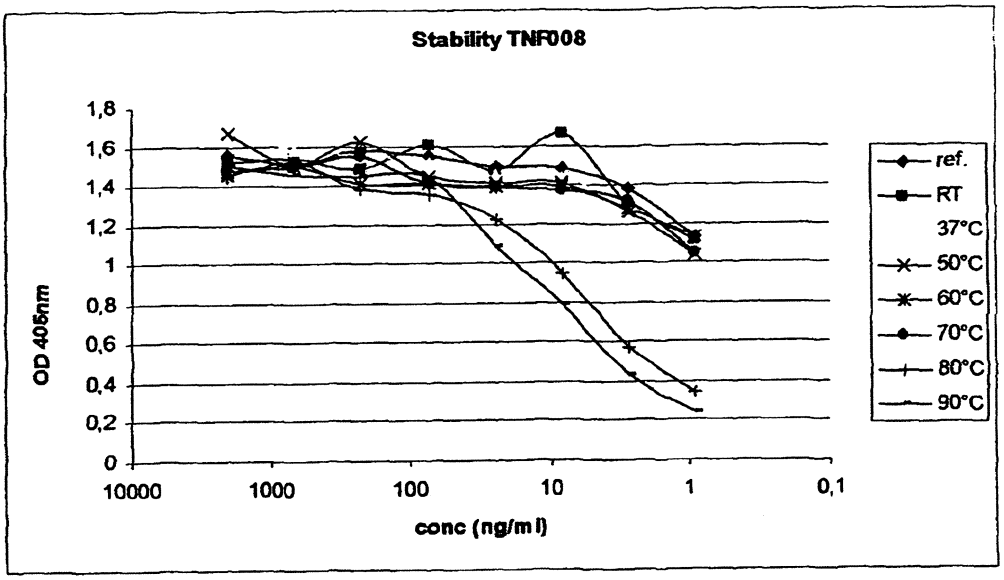


Figure 21 - continued



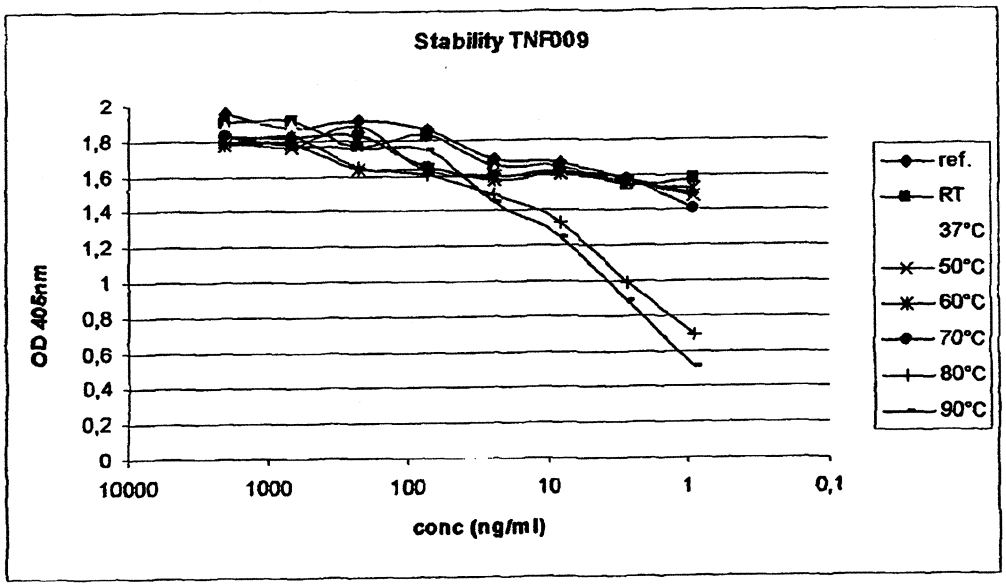


Figure 21 - continued

```
TNF1:
DP51    EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYSMN WVRQAPGKGLEWVS YISSSSSTIYY(SEQ
ID NO: 472)
DP53    EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYWMH WVRQAPGKGLVWVS RINSDGSSTSY(SEQ
ID NO: 473)
TNF1    QVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
TNF13   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
TNF14   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
         ****************************  * *  ********** ***  *        *

DP51    ADSVKG RFTISRDNAKNSLYLQMNSLRDEDTAVYYCAR ------ WGQGTLVTVSS (SEQ ID
NO: 472 - continued)
DP53    ADSVKG RFTISRDNAKNTLYLQMNSLRAEDTAVYYCAR ------ WGQGTLVTVSS (SEQ ID
NO: 473 - continued)
TNF1    PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTALYYCAR SPSGFN RGQGTQVTVSS
TNF13   PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTAVYYCAR SPSGFN RGQGTQVTVSS
TNF14   PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTALYYCAR SPSGFN RGQGTLVTVSS
         ***** ********** ********  **** *****          **** *****
```

Figure 22

```
TNF2:
DP54    EVQLVESGGGLVQPGGSLRLSCAASGFTFS -----SYWMS WVRQAPGKGLEWVANIKQDGSEKYY
(SEQ ID NO: 474)
TNF2    QVQLVESGGGLVQAGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKEREFVARIYWSSGLTYY
TNF15   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF16   EVQLVESGGGLVQPGGSLRLSCAASGFTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF17   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF18   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF19   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
         ************ ************ ***       *    * ******  * ** *       **

DP54    VDSVKG RFTISRDNAKNSLYLQMNSLRAEDTAVYYCAR --------------- WGQGTLVTVSS
(SEQ ID NO: 474 - continued)
TNF2    ADSVKG RFTISRDIAKNTVDLLMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF15   ADSVKG RFTISRDIAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF16   ADSVKG RFTISRDIAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF17   ADSVKG RFTISRDNAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF18   ADSVKG RFTISRDIAKNTVDLQMNSLRPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF19   ADSVKG RFTISRDIAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTLVTVSS
         ***** ******* ***   * ****  *********                  ***** *****
```

Figure 23

```
TNF3:
DP29    EVQLVESGGGLVQPGGSLRLSCAASGFTFS DHYMDWVRQAPGKGLEWVG RTRNKANSYTTEYAAS
(SEQ ID NO: 475)
TNF3    EVQLVESGGGLVQAGGSLSLSCSASGRSLS NYYMGWFRQAPGKERELLG NI--SWRGYNIYYKDS
TNF20   EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMGWFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF21   EVQLVESGGGLVQPGGSLRLSCAASGFTFS NYYMGWFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF22   EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMGWFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF23   EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMGWFRQAPGKGRELLG NI--SWRGYNIYYKDS
        ************* **** *** ***   *   ** * ******  *  *         *   *  *

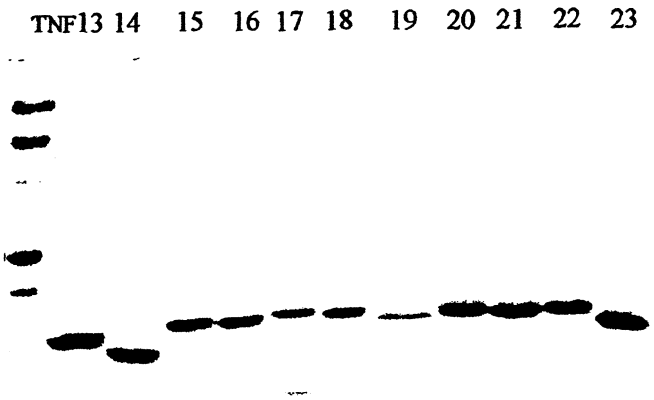
DP29    VKG RFTISRDDSKNSLYLQMNSLKTEDTAVYYCAR--------------- WGQGTLVTVSS
(SEQ ID NO: 475 - continued)
TNF3    VKG RFTISRDDAKNTIYLQMNRLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF20   VKG RFTISRDDSKNTIYLQMNSLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF21   VKG RFTISRDDSKNTIYLQMNSLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF22   VKG RFTISRDDSKNTIYLQMNSLKTEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF23   VKG RFTISRDDSKNTIYLQMNSLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTLVTVSS
        *** ******** **  ***** ** *********                  ***** *****
```

Figure 24

```
ALB1:
DP51  EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYSMN WVRQAPGKGLEWVS YISSSSSTIYYADSVKG
DP53  EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYWMH WVRQAPGKGLVWVS RINSDGSSTSYADSVKG
ALB1  AVQLVESGGGLVQPGNSLRLSCAASGFTFR SFGMS WVRQAPGKEPEWVS SISGSGSDTLYADSVKG
ALB3  EVQLVESGGGLVQPGGSLRLSCAASGFTFR SFGMS WVRQAPGKEPEWVS SISGSGSDTLYADSVKG
ALB4  EVQLVESGGGLVQPGGSLRLSCAASGFTFS SFGMS WVRQAPGKEPEWVS SISGSGSDTLYADSVKG
ALB5  EVQLVESGGGLVQPGGSLRLSCAASGFTFR SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
      ************** ************** *  *  ********   *** *   ** * *******

DP51    RFTISRDNAKNSLYLQMNSLRDEDTAVYYCAR ------ WGQGTLVTVSS
DP53    RFTISRDNAKNTLYLQMNSLRAEDTAVYYCAR ------ WGQGTLVTVSS
ALB1    RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB3    RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB4    RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB5    RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
        ********** *********  ********  .          *********
```

Figure 25



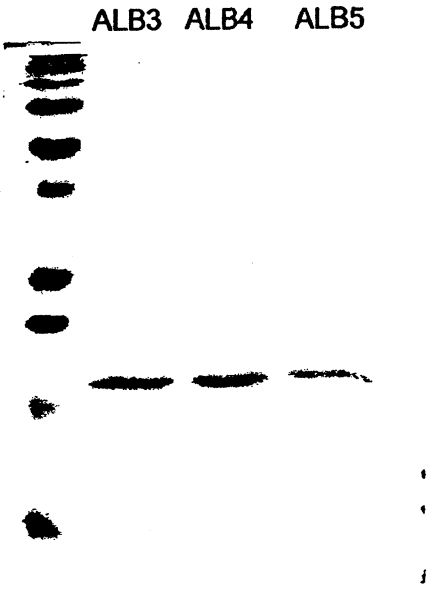


Figure 26

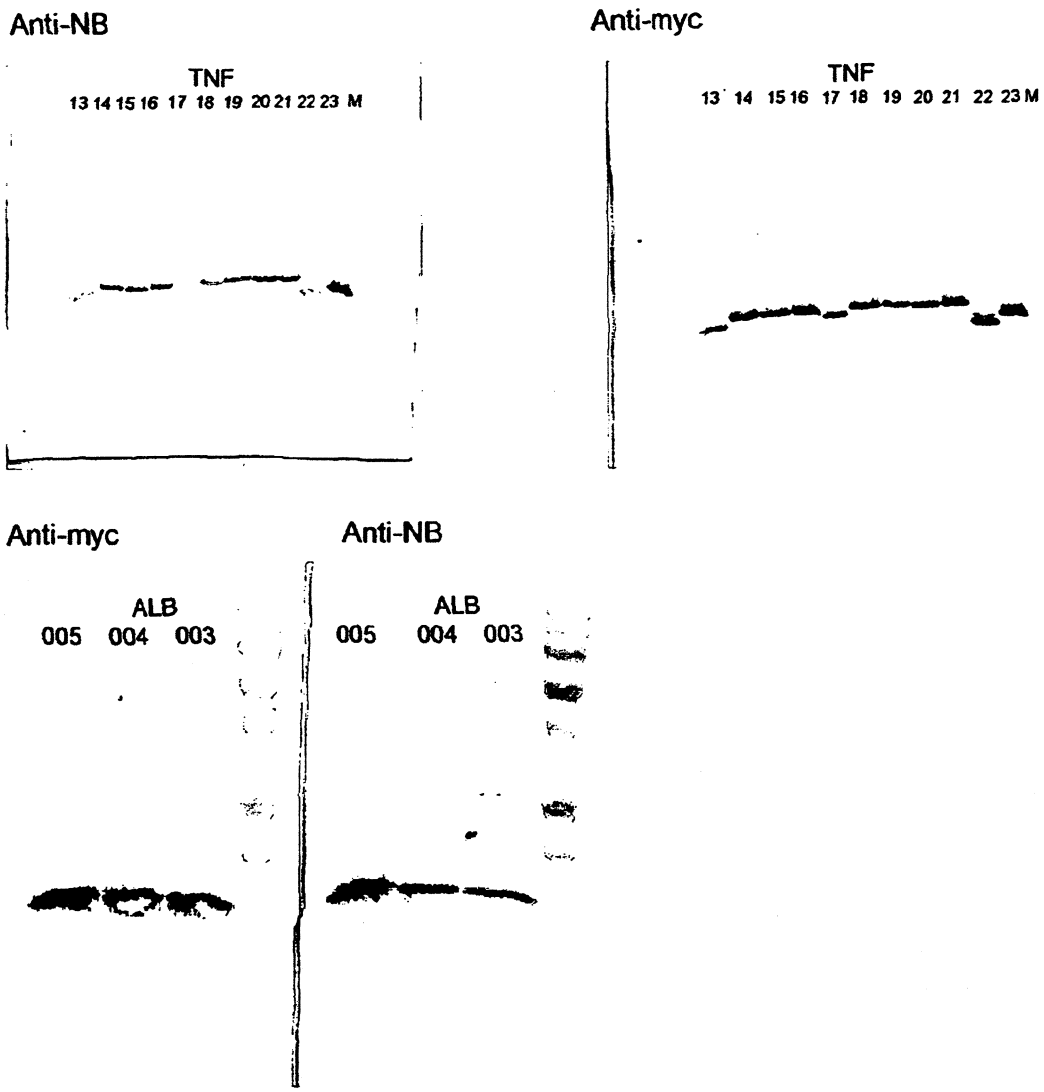

Anti-NB
TNF
13 14 15 16 17 18 19 20 21 22 23 M
Anti-myc
TNF
13 14 15 16 17 18 19 20 21 22 23 M
Anti-myc
ALB
005 004 003
Anti-NB
ALB
005 004 003

Figure 27

1G5 WT and humanized versions versus human TNF (normalized data)

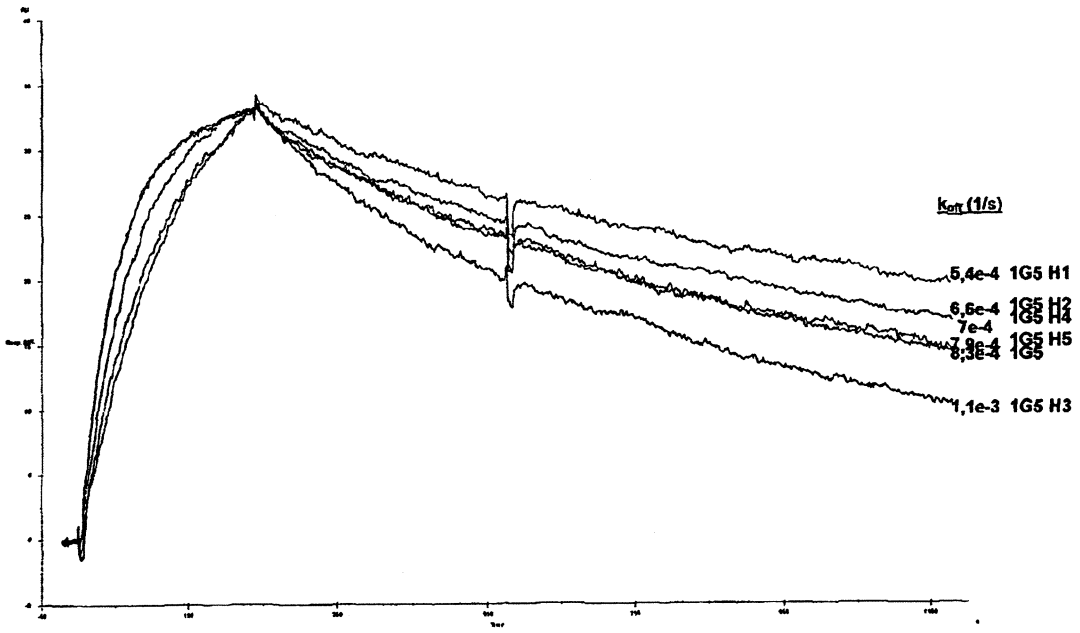


Figure 28

6A6 WT and humanized versions versus human SA (normalized data)

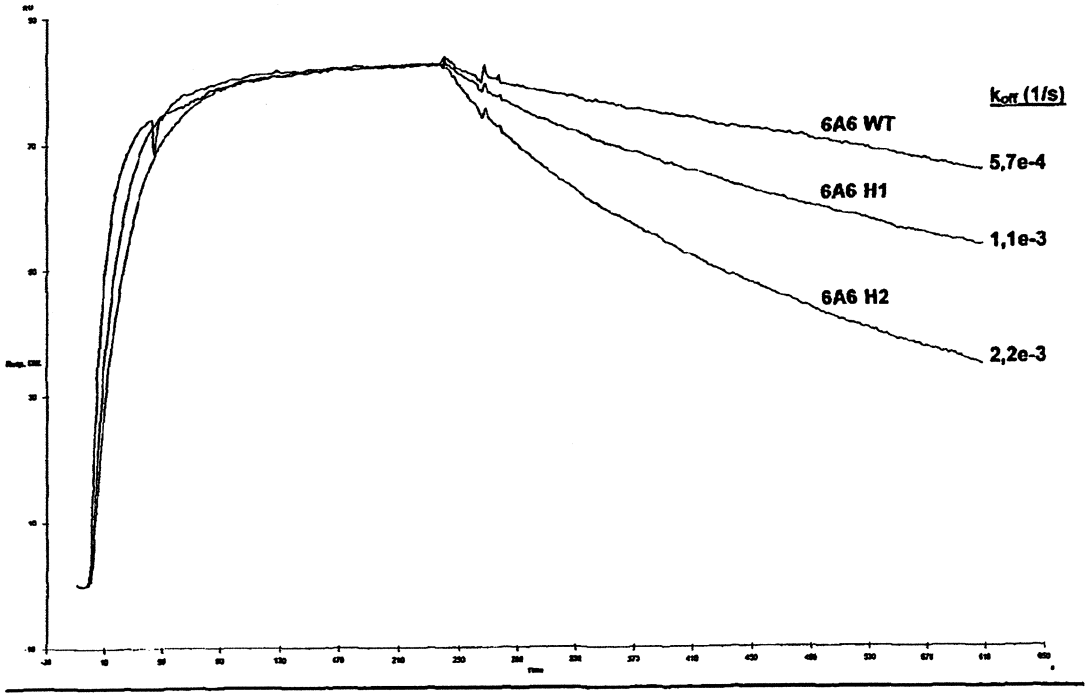
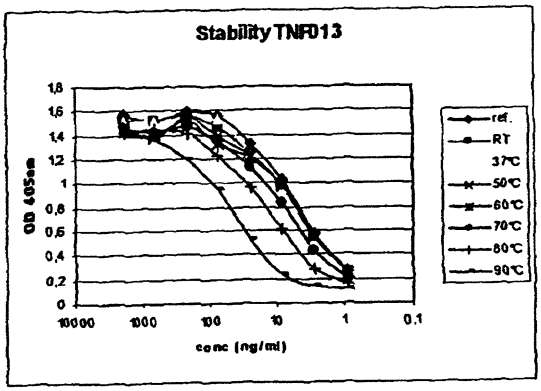
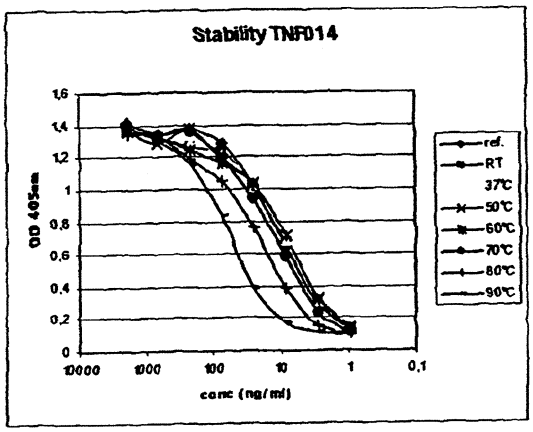


Figure 29


Stability TNF013
OD 405nm
1,8
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C


Stability TNF014
OD 405nm
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
10000
1000
100
10
1
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

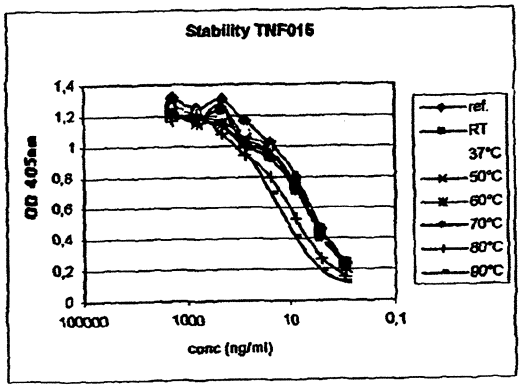
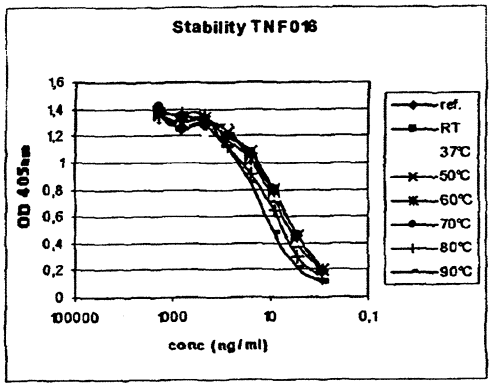
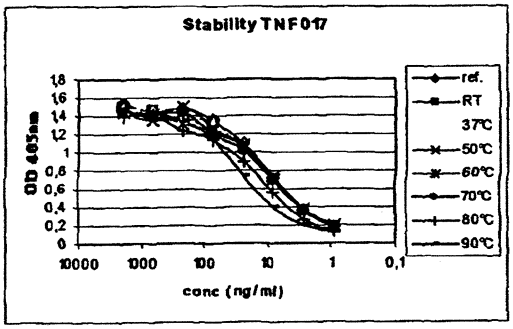
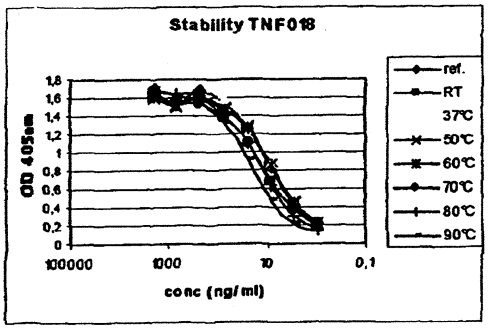

Stability TNF015
OD 405nm
1,4
1,2
1
0,8
0,6
0,4
0,2
0
100000
1000
10
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

Figure 30







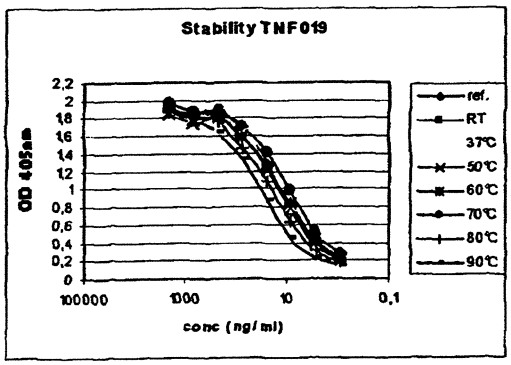
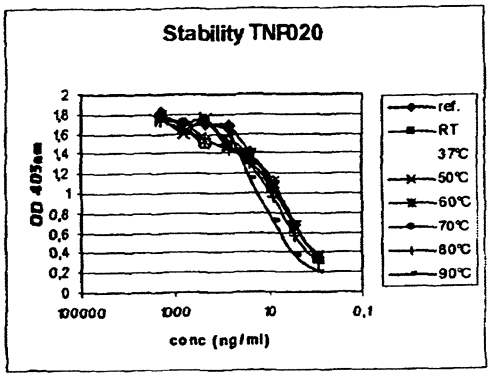
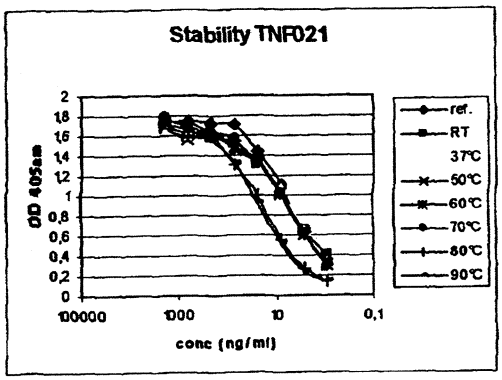
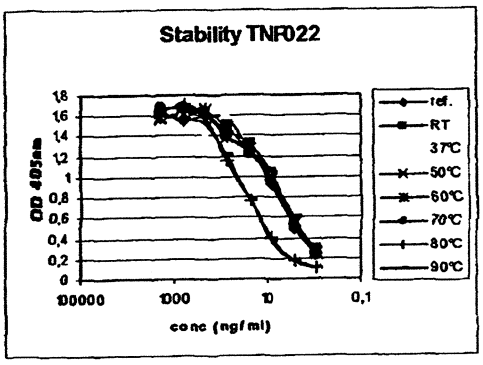


Figure 30 - continued







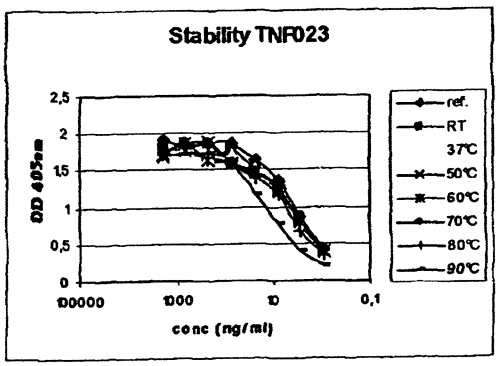


Figure 30 - continued

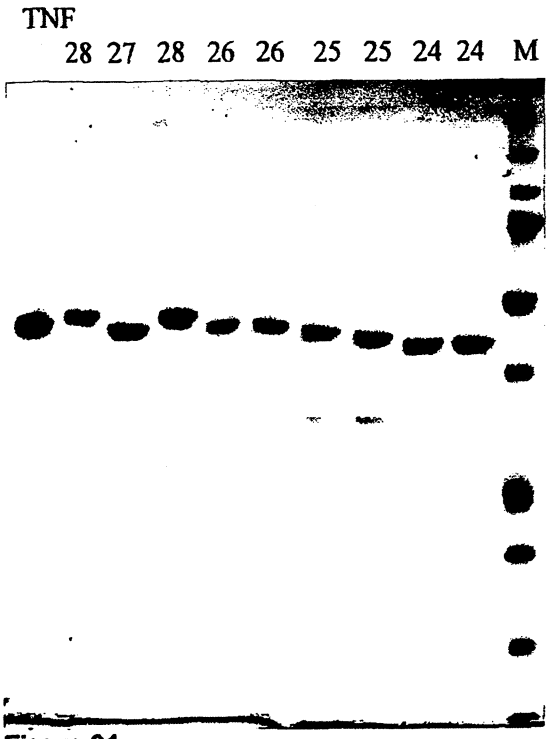
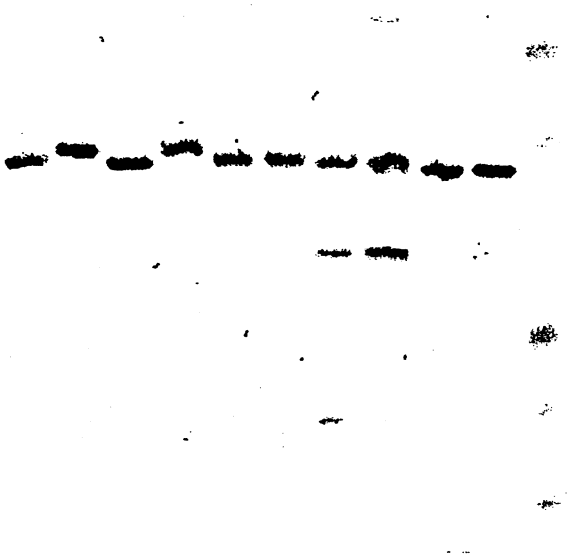


Figure 31

Anti-myc
TNF
28 27 28 26 26 25 25 24 24 M



Anti-NB
TNF
M 24 24 25 25 26 26 28 27 28

Figure 32

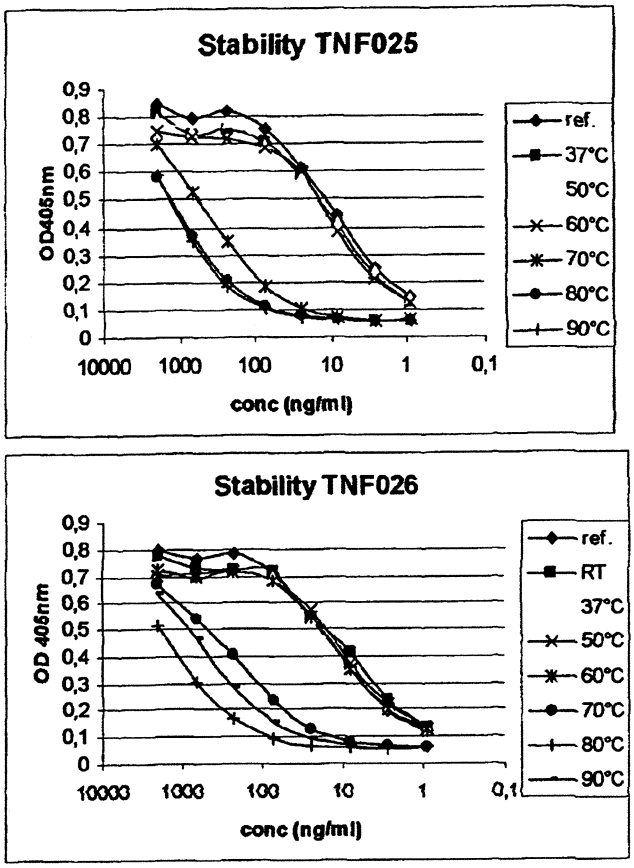

Stability TNF025
OD405nm
0,9
0,8
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0
10000
1000
100
10
1
0,1
conc (ng/ml)
ref.
37°C
50°C
60°C
70°C
80°C
90°C
Stability TNF026
OD 405nm
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

Figure 33

```
TNF1:
DP51    EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYSMN WVRQAPGKGLEWVS YISSSSSTIYY
DP53    EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYWMH WVRQAPGKGLVWVS RINSDGSSTSY
TNF1    QVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
TNF13   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
TNF14   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
TNF29   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
TNF30   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DYWMY WVRQAPGKGLEWVS EINTNGLITKY
        e

DP51    ADSVKG RFTISRDNAKNSLYLQMNSLRDEDTAVYYCAR ------ WGQGTLVTVSS
DP53    ADSVKG RFTISRDNAKNTLYLQMNSLRAEDTAVYYCAR ------ WGQGTLVTVSS
TNF1    PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTALYYCAR SPSGFN RGQGTQVTVSS
TNF13   PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTAVYYCAR SPSGFN RGQGTQVTVSS
TNF14   PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTALYYCAR SPSGFN RGQGTLVTVSS
TNF29   PDSVKG RFTISRDNAKNTLYLQMNSLKPEDTAVYYCAR SPSGFN RGQGTLVTVSS
TNF30   PDSVKG RFTISRDNAKNTLYLQMNSLRPEDTAVYYCAR SPSGFN RGQGTLVTVSS
                                    ii    b              e
```

Figure 34

```
TNF2:
DP54    EVQLVESGGGLVQPGGSLRLSCAASGFTFS -----SYWMS WVRQAPGKGLEWVANIKQDGSEKYY
TNF2    QVQLVESGGGLVQAGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKEREFVARIYWSSGLTYY
TNF15   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF16   EVQLVESGGGLVQPGGSLRLSCAASGFTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF17   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF18   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF19   EVQLVESGGGLVQPGGSLRLSCAASGRTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF31   EVQLVESGGGLVQPGGSLRLSCAASGFTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
TNF32   EVQLVESGGGLVQPGGSLRLSCAASGFTFS EPSGYTYTIG WFRQAPGKGREFVARIYWSSGLTYY
        e           i           e                b      ei b

DP54    VDSVKG RFTISRDNAKNSLYLQMNSLRAEDTAVYYCAR ---------------- WGQGTLVTVSS
TNF2    ADSVKG RFTISRDIAKNTVDLLMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF15   ADSVKG RFTISRDIAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF16   ADSVKG RFTISRDIAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF17   ADSVKG RFTISRDNAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF18   ADSVKG RFTISRDIAKNTVDLQMNSLRPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF19   ADSVKG RFTISRDIAKNTVDLQMNSLKPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTLVTVSS
TNF31   ADSVKG RFTISRDIAKNTVDLQMNSLRPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTQVTVSS
TNF32   ADSVKG RFTISRDIAKNTVDLQMNSLRPEDTAVYYCAA RDGIPTSRSVGSYNY WGQGTLVTVSS
                    e   bbb b    ii         b                      e
```

Figure 35

```
TNF3:
DP29   EVQLVESGGGLVQPGGSLRLSCAASGFTFS DHYMD WVRQAPGKGLEWVG RTRNKANSYTTEYAAS
TNF3   EVQLVESGGGLVQAGGSLSLSCSASGRSLS NYYMG WFRQAPGKERELLG NI--SWRGYNIYYKDS
TNF20  EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMG WFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF21  EVQLVESGGGLVQPGGSLRLSCAASGFTFS NYYMG WFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF22  EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMG WFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF23  EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMG WFRQAPGKGRELLG NI--SWRGYNIYYKDS
TNF33  EVQLVESGGGLVQPGGSLRLSCAASGRSLS NYYMG WFRQAPGKGRELLG NI--SWRGYNIYYKDS
                  i    i   i   ebi         b      ei bb

DP29     VKG RFTISRDDSKNSLYLQMNSLKTEDTAVYYCAR -------------- WGQGTLVTVSS
TNF3     VKG RFTISRDDAKNTIYLQMNRLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF20    VKG RFTISRDDSKNTIYLQMNSLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF21    VKG RFTISRDDSKNTIYLQMNSLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTQVTVSS
TNF22    VKG RFTISRDDSKNTIYLQMNSLKTEDTAVYYCAA SILPLSDDPGWNTY WGQGTLVTVSS
TNF23    VKG RFTISRDDSKNTIYLQMNSLKPEDTAVYYCAA SILPLSDDPGWNTY WGQGTLVTVSS
TNF33    VKG RFTISRDDSKNTIYLQMNSLRPEDTAVYYCAA SILPLSDDPGWNTY WGQGTLVTVSS
                    e  bb     i ii         b                      e
```

Figure 36

```
ALB1:
DP51   EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYSMN WVRQAPGKGLEWVS YISSSSSTIYYADSVKG
DP53   EVQLVESGGGLVQPGGSLRLSCAASGFTFS SYWMH WVRQAPGKGLVWVS RINSDGSSTSYADSVKG
ALB1   AVQLVESGGGLVQPGNSLRLSCAASGFTFR SFGMS WVRQAPGKEPEWVS SISGSGSDTLYADSVKG
ALB3   EVQLVESGGGLVQPGGSLRLSCAASGFTFR SFGMS WVRQAPGKEPEWVS SISGSGSDTLYADSVKG
ALB4   EVQLVESGGGLVQPGGSLRLSCAASGFTFS SFGMS WVRQAPGKEPEWVS SISGSGSDTLYADSVKG
ALB5   EVQLVESGGGLVQPGGSLRLSCAASGFTFR SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
ALB6   EVQLVESGGGLVQPGNSLRLSCAASGFTFR SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
ALB7   EVQLVESGGGLVQPGNSLRLSCAASGFTFR SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
ALB8   EVQLVESGGGLVQPGNSLRLSCAASGFTFS SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
ALB9   EVQLVESGGGLVQPGNSLRLSCAASGFTFS SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
ALB10  EVQLVESGGGLVQPGNSLRLSCAASGFTFS SFGMS WVRQAPGKGLEWVS SISGSGSDTLYADSVKG
       e              i              i               ei

DP51     RFTISRDNAKNSLYLQMNSLRDEDTAVYYCAR ------ WGQGTLVTVSS
DP53     RFTISRDNAKNTLYLQMNSLRAEDTAVYYCAR ------ WGQGTLVTVSS
ALB1     RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB3     RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB4     RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB5     RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTQVTVSS
ALB6     RFTISRDNAKTTLYLQMNSLKPEDTAVYYCTI GGSLSR SSQGTLVTVSS
ALB7     RFTISRDNAKTTLYLQMNSLRPEDTAVYYCTI GGSLSR SSQGTLVTVSS
ALB8     RFTISRDNAKTTLYLQMNSLRPEDTAVYYCTI GGSLSR SSQGTLVTVSS
ALB9     RFTISRDNAKNTLYLQMNSLRPEDTAVYYCTI GGSLSR SSQGTLVTVSS
ALB10    RFTISRDNAKNTLYLQMNSLRPEDTAVYYCTI GGSLSR SGQGTLVTVSS
               i          ii         bb         ib   i
```

Figure 37

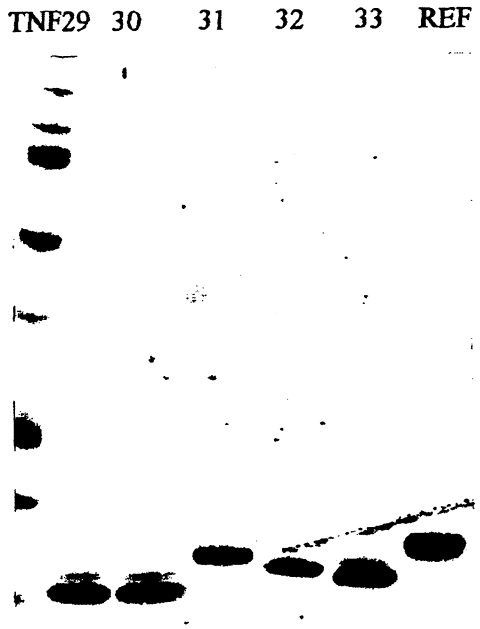


Figure 38

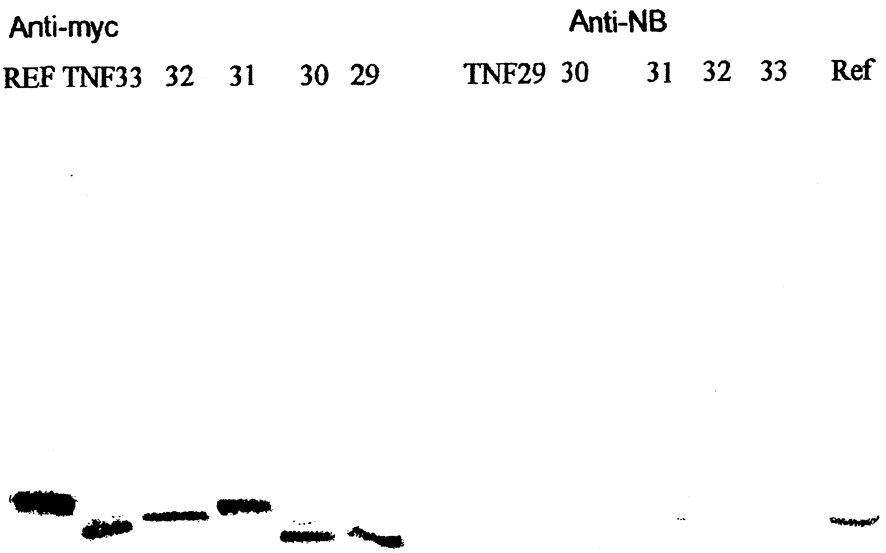
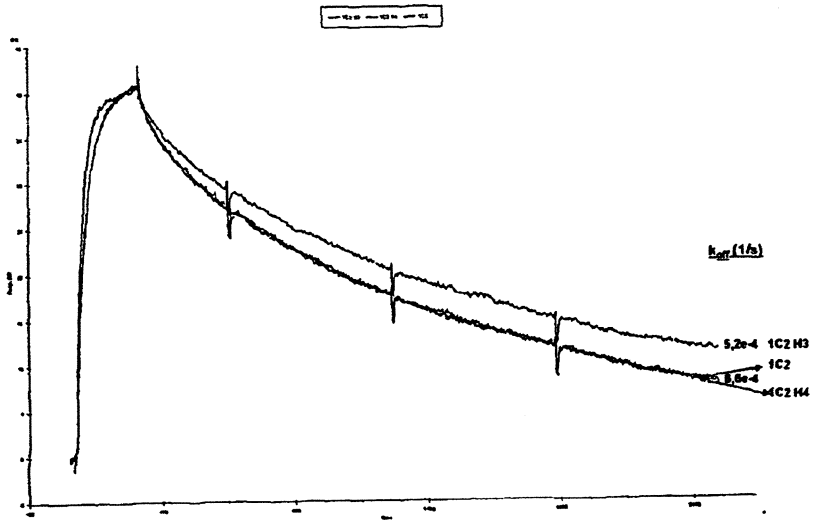


Figure 39

1C2 WT and humanized versions versus human TNF (normalized data)



1G5 WT and humanized versions versus human TNF (normalized data)

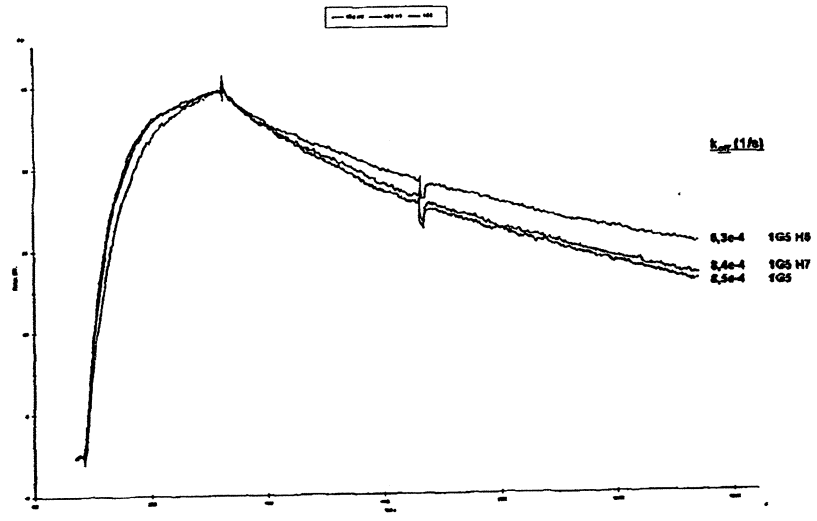


Figure 40

5F10 WT and humanized versions versus human TNF (normalized data)

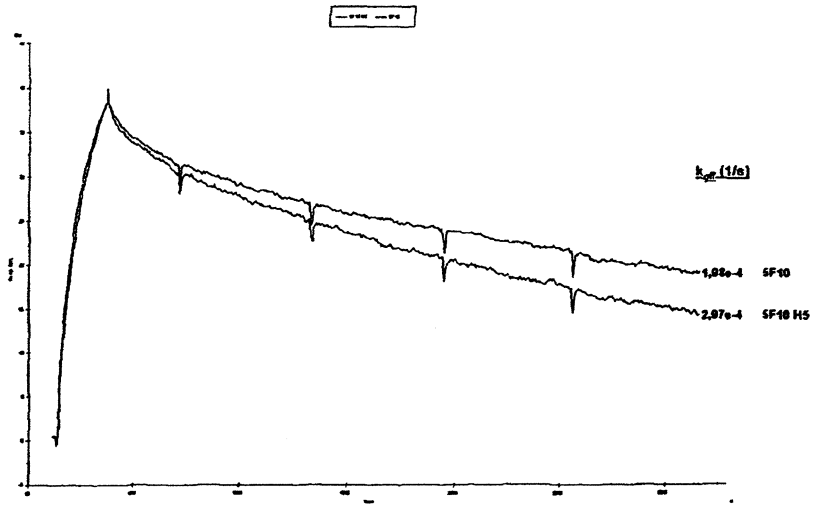
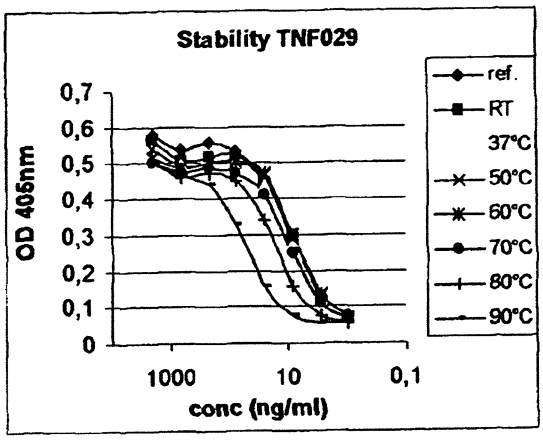
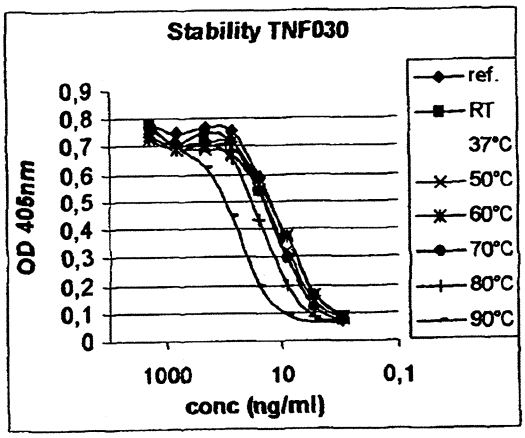
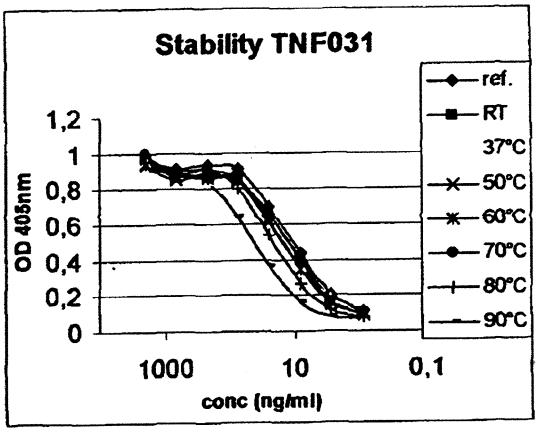
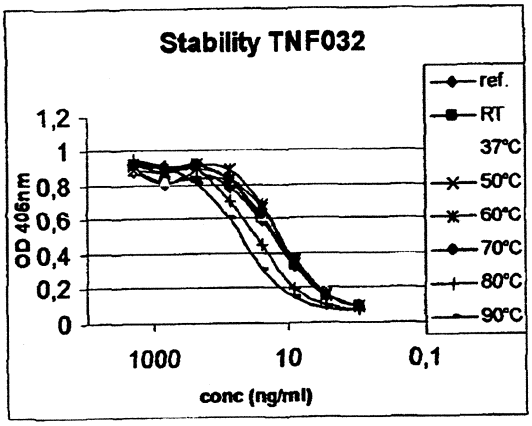


Figure 40 - continued


Stability TNF029
OD 405nm
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0
1000
10
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C


Stability TNF030
OD 405nm
0,9
0,8
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0
1000
10
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C


Stability TNF031
OD 405nm
1,2
1
0,8
0,6
0,4
0,2
0
1000
10
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C


Stability TNF032
OD 405nm
1,2
1
0,8
0,6
0,4
0,2
0
1000
10
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

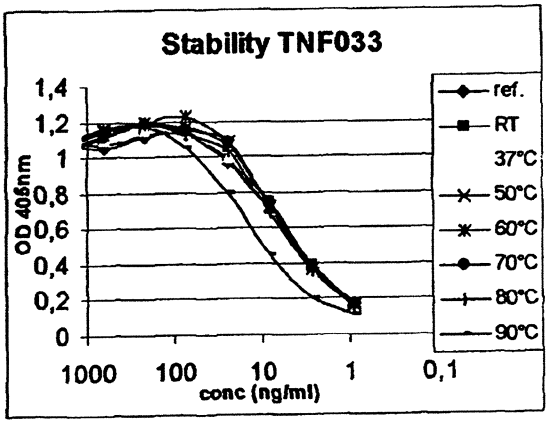

Stability TNF033
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1,4
1,2
1
0,8
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0,4
0,2
0
1000
100
10
1
0,1
conc (ng/ml)
ref.
RT
37°C
50°C
60°C
70°C
80°C
90°C

Figure 41

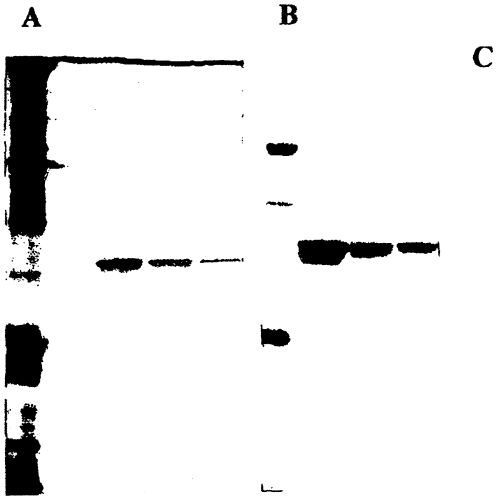


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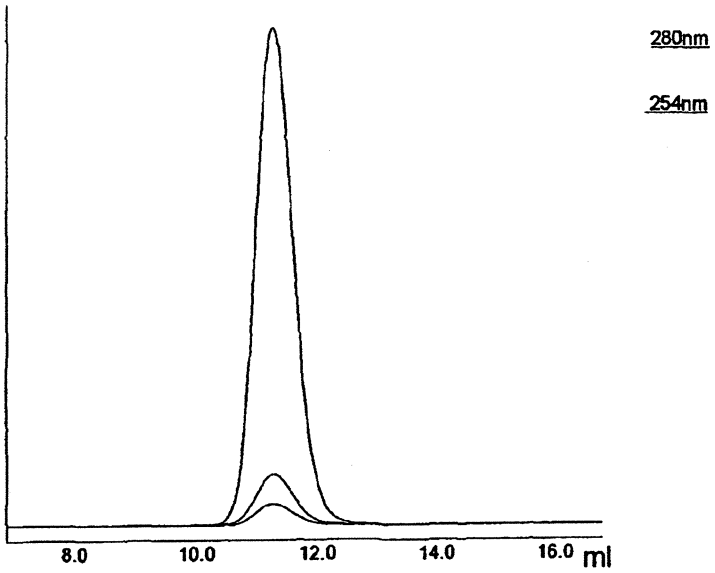


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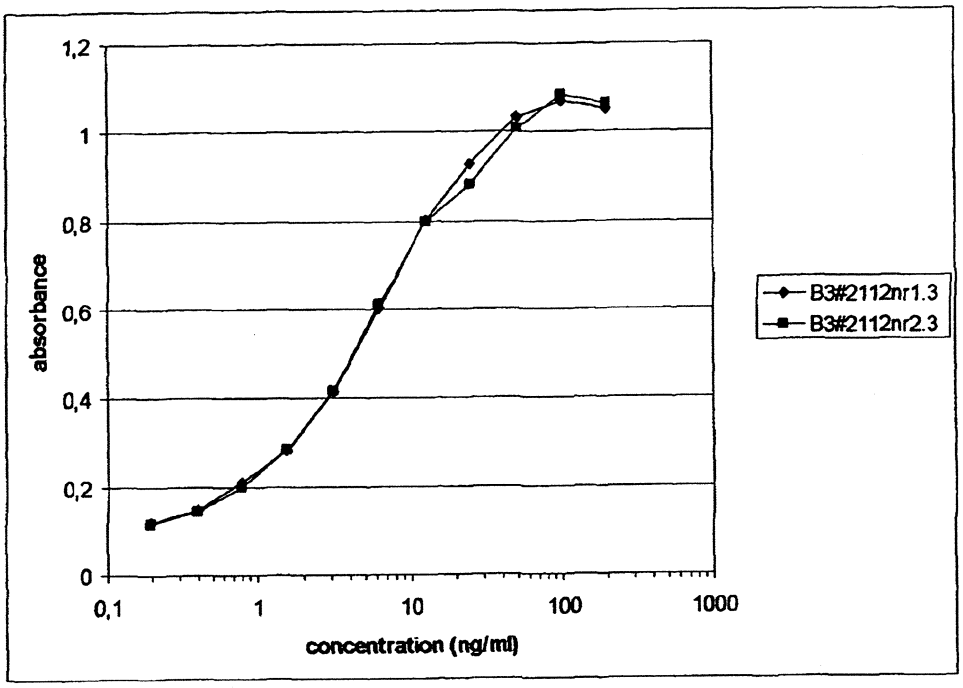


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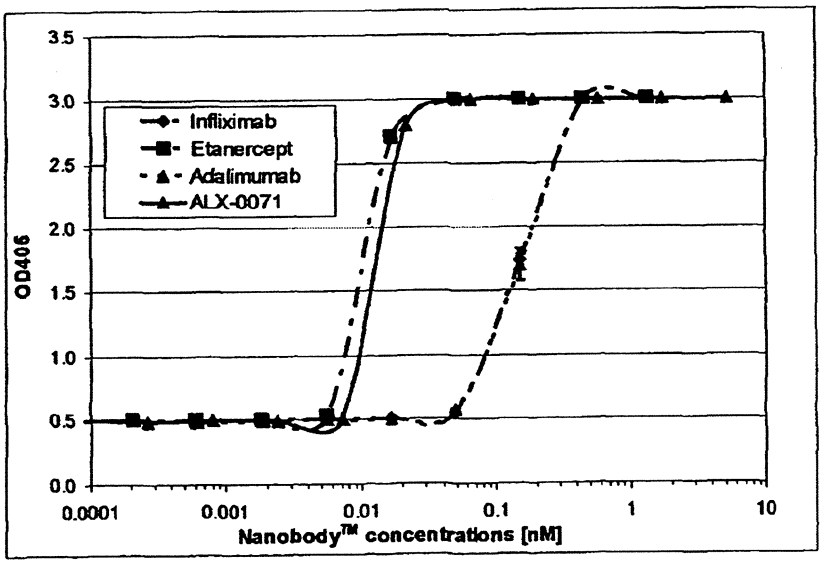


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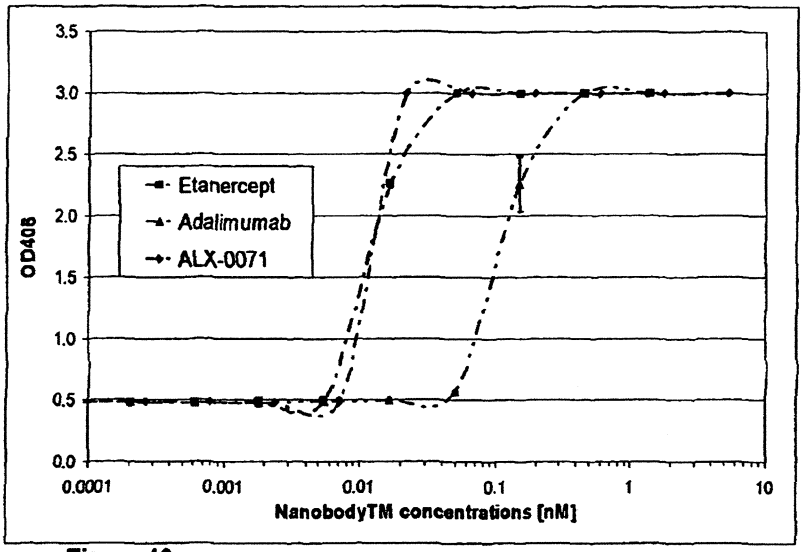


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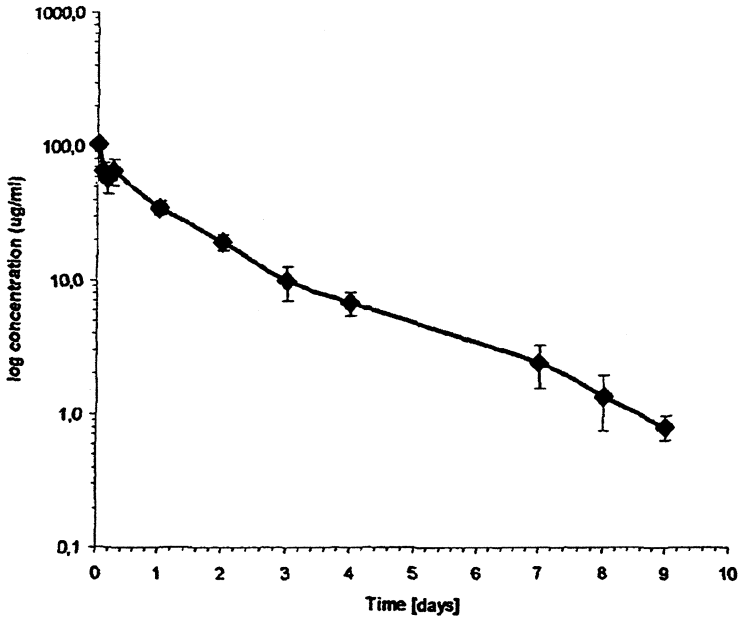


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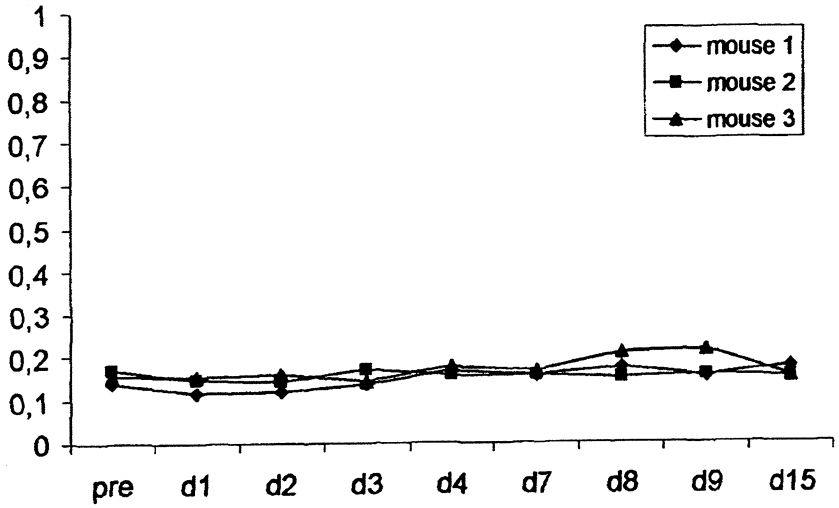


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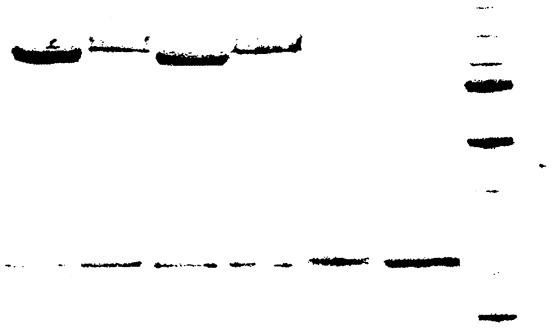


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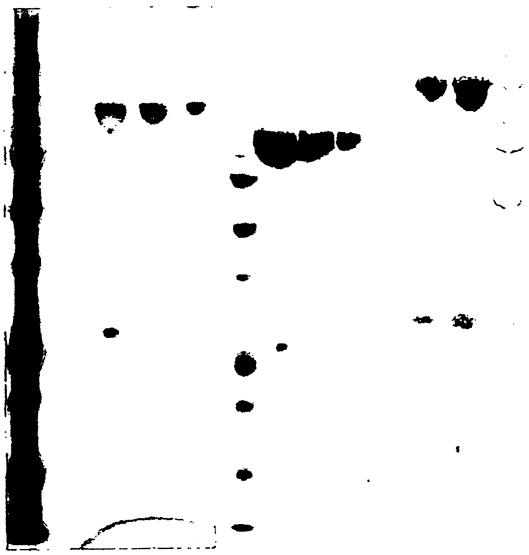


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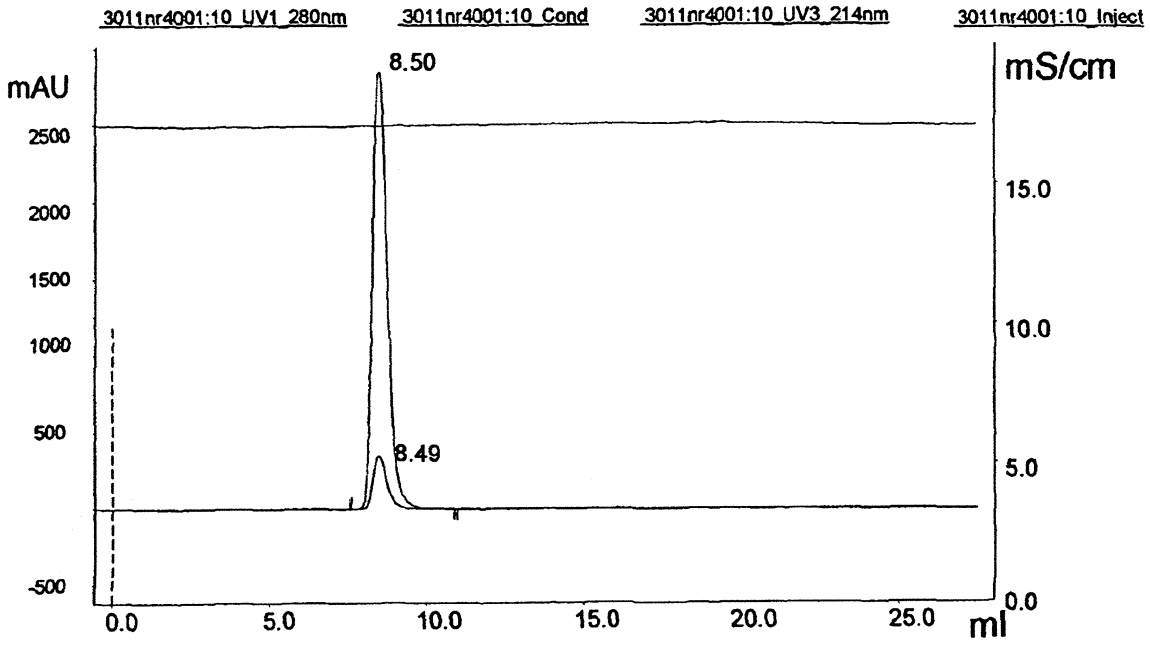


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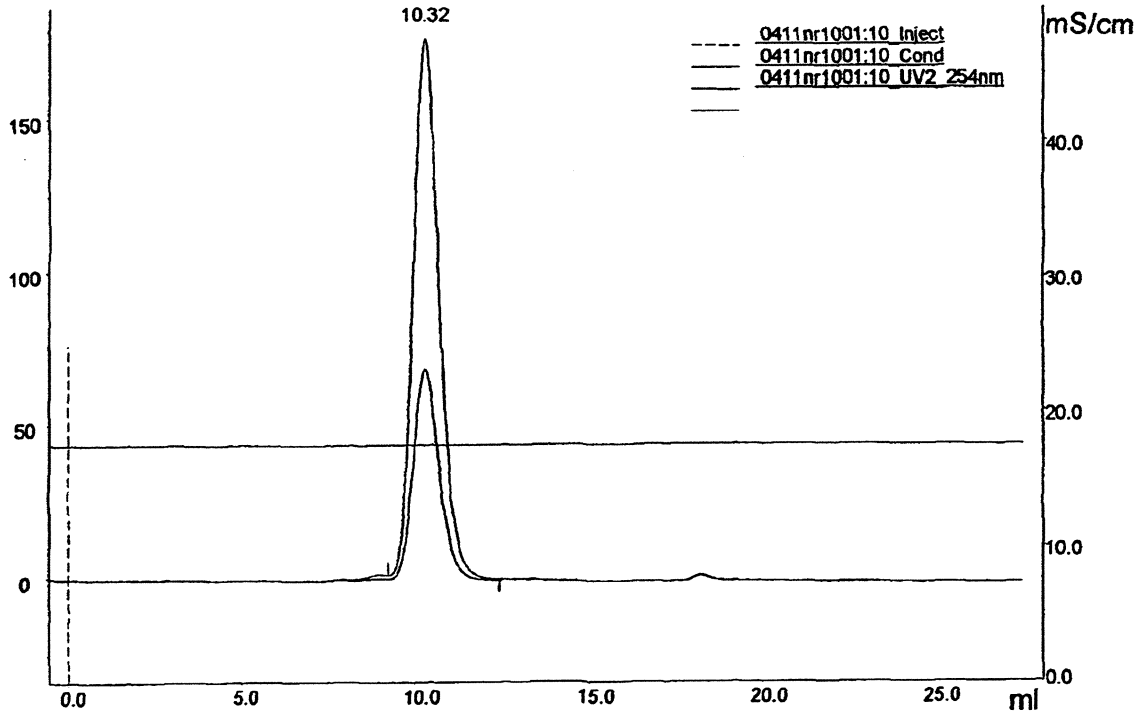


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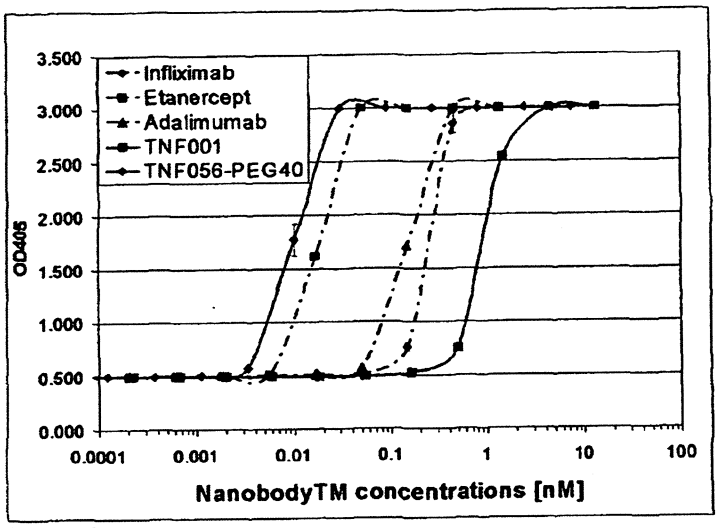


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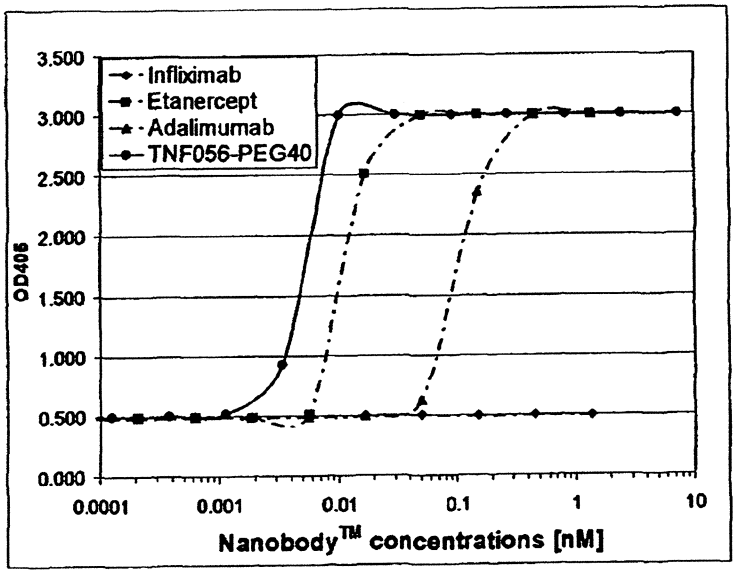


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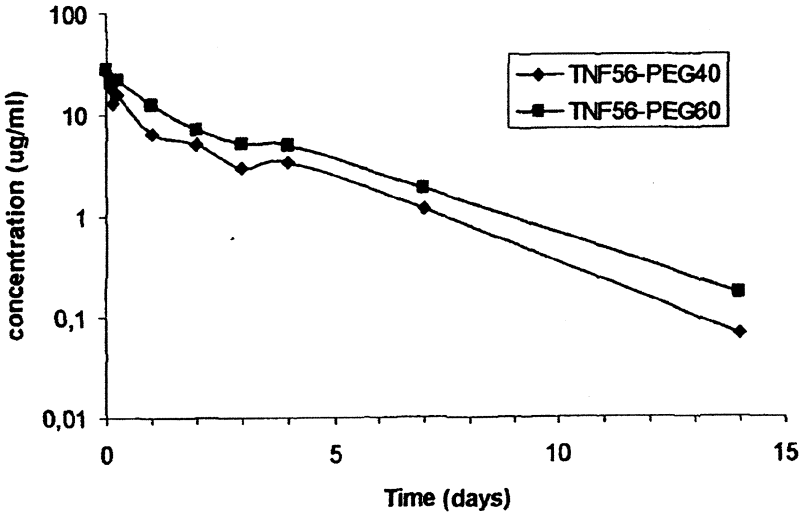


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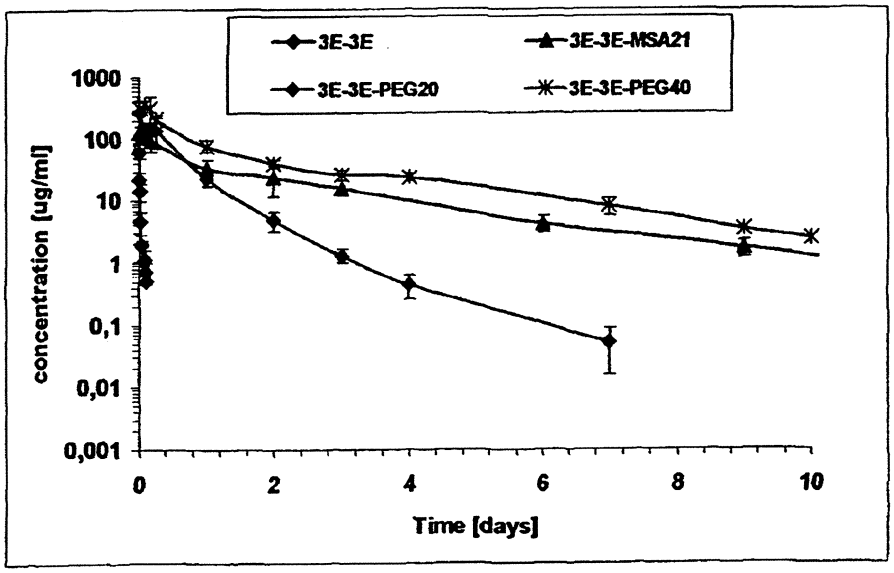


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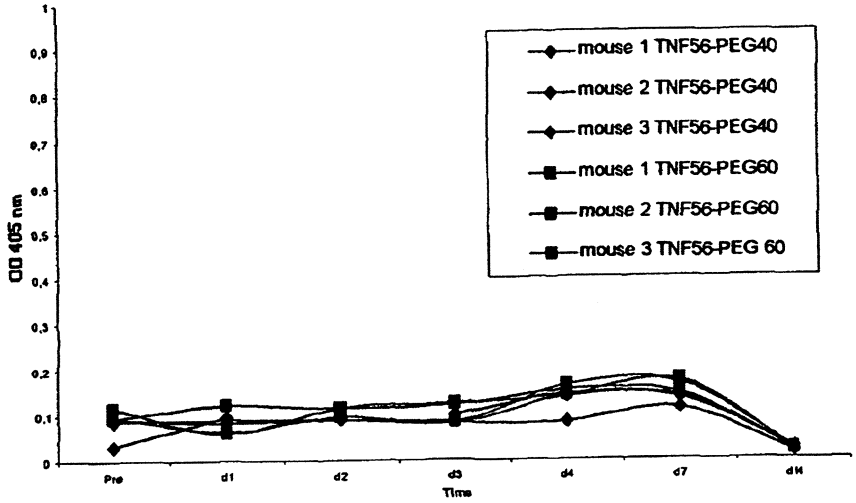


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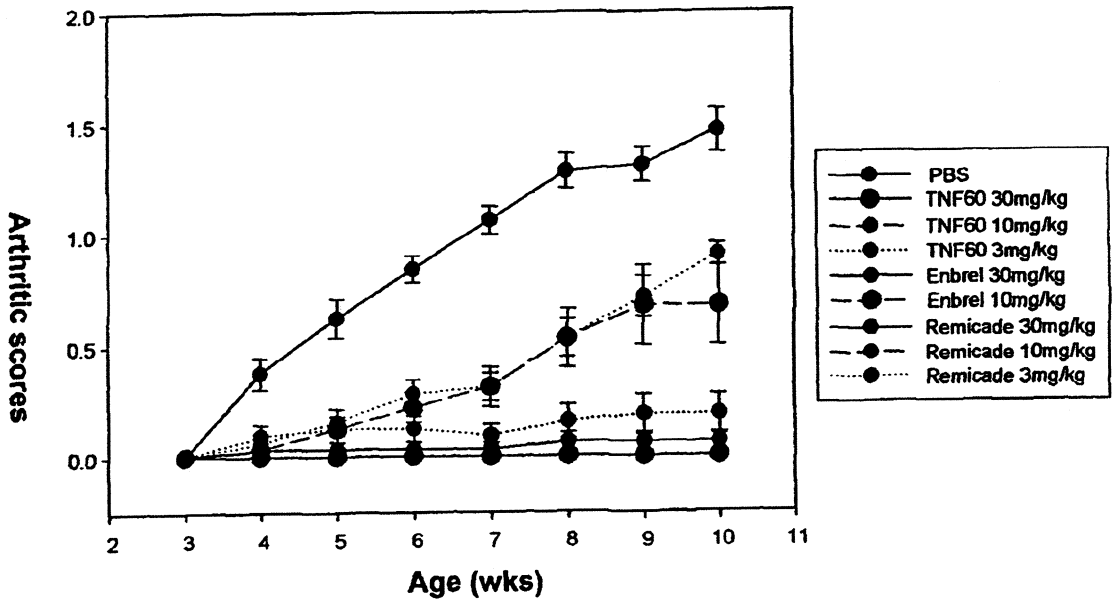


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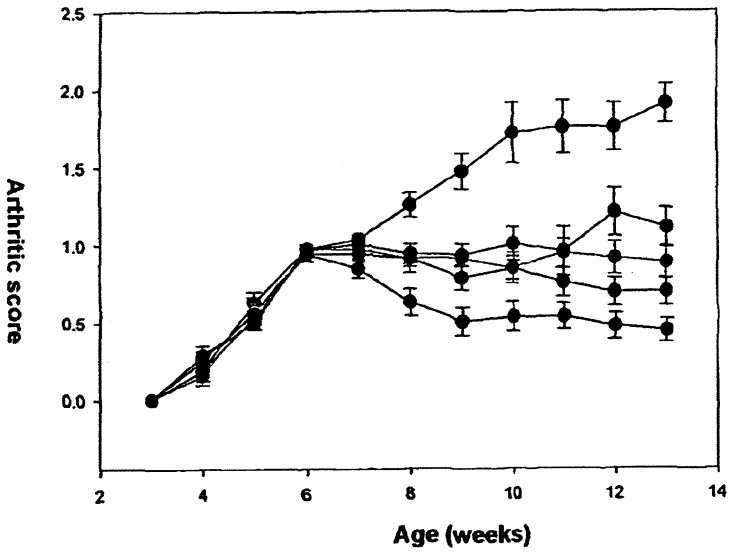


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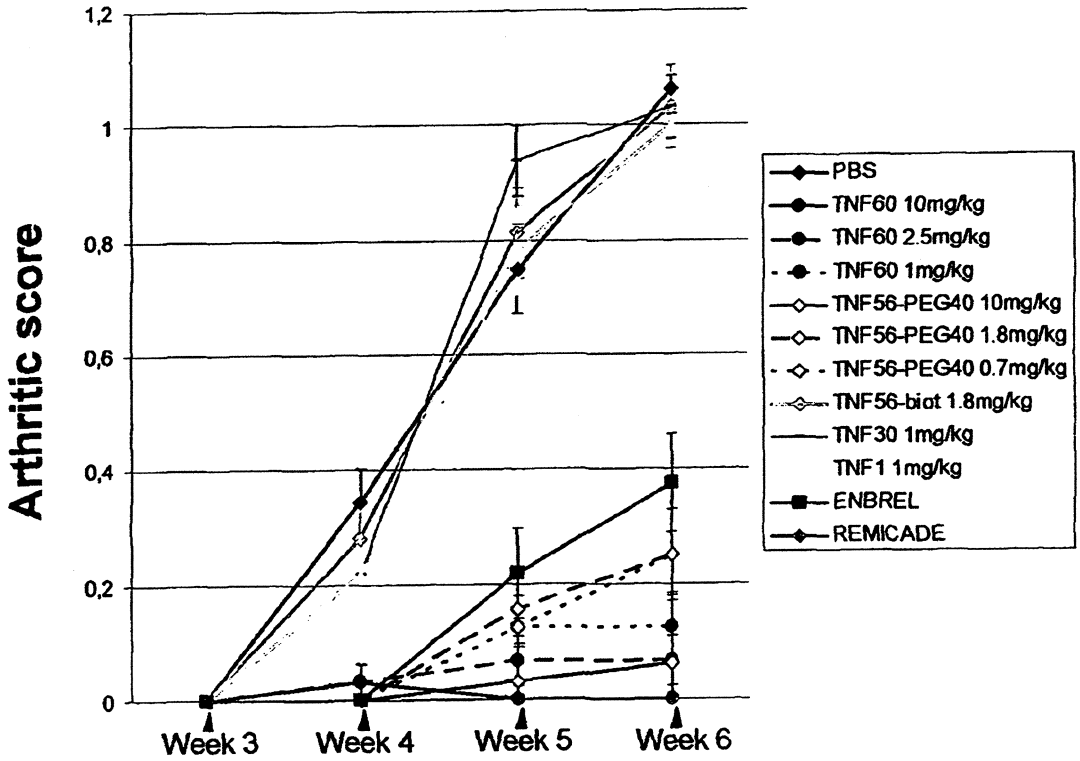


Figure 60

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                    1                                                  50
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      VHH1A     (1) QVQL  SGGGLVQ GGSLRLSCATSGFDFSVS -----  W RQAPGK L
      VHH3E     (1) QVQL  SGGGLVQ GGSLRLSCA SG  FS  SGYT  GWFRQAPGKE
      VHH3G     (1) QVQL  SGGGLVQAGGSLRLSCAVSG  FSA S--V  GWFRQAPGKE
  Consensus     (1) QVQLQESGGGLVQPGGSLRLSCAASGRTFSDHW   YTMYWVRQAPGKGR
                    51                                                 100
PMP1C2+M13rev  (46) E V EINTNG ITKYPDSVKGRF ISRD AKNT  L M  L PEDTA YY
      VHH1A    (46) E V EINTNG ITKYVDSVKGRF ISRD AKNT  L MD LIPEDTA YY
      VHH3E    (51) E V  I    G T Y DSVKGRFAISRDIAKNT DLTM NLEPEDTA YY
      VHH3G    (49) E V  I    A T Y DSVKGRF ISRD AKNT DLLM  L PEDTA YY
  Consensus    (51) EFVARIYWSSLNTYYADSVKGRFTISRDNAKNTLYLQMNSLKPEDTALYY
                    101                          129
PMP1C2+M13rev  (96) CA ------SP--  G -NRGQGTQVTVSS
      VHH1A    (96) CA ------SP--  GS- RGQGTQVTVSS
      VHH3E   (101) CAA     S   E     GQGTQVTVSS
      VHH3G    (99) CAA     S   G     GQGTQVTVSS
  Consensus   (101) CARRDGIPTSRSVSSYNYWGQGTQVTVSS
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Figure 61



Figure 62

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<120> Improved Nanobodies™ against Tumor Necrosis Factor-alpha

<130> ABL-027-PCT

<140> PCT/EP2006/004678
<141> 2006-05-17

<150> 60/682,332
<151> 2005-05-18

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20 25

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1 5

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Gly Tyr Tyr Met Gly
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Gly

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Gly

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1 5 10 15

Gly

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Gly

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1 5 10 15

Gly

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Gly

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<210> 30
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Asn Tyr Trp Met Tyr
1 5

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Gly

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1 5 10 15

Gly

<210> 44
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Gly

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Gly

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Gly

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

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr
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Val Ser Ser
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Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Pro Ser Gly Ser Phe Arg Gly Gln Gly Thr Gln Val Thr
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Val Ser Ser
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Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

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

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

Leu Gln Met Asp Ser Leu Ile Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Pro Ser Gly Ser Phe Arg Gly Gln Gly Thr Gln Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 55
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 55

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Glu Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Leu Met Asn Ser Leu Lys Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 56
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 56

Gln Val Lys Leu Glu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asp
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr
20 25 30

Ser Gly Tyr Thr Tyr Thr Val Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Glu Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Asn Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Leu Met Asn Asn Leu Glu Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Glu Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 57
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 57

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Asp Tyr
20 25 30

Ser Gly Tyr Thr Tyr Thr Val Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Glu Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Asn Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Leu Met Asn Asn Leu Glu Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Glu Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 58
<211> 127
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 58

Ala Val Gln Leu Val Asp Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Ala His
20 25 30

Ser Val Tyr Thr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg
35 40 45

Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Ala Asn Thr Tyr Tyr Ala
50 55 60

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

Thr Val Asp Leu Leu Met Asn Cys Leu Lys Pro Glu Asp Thr Ala Val
85 90 95

Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Glu
100 105 110

Ala Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120 125

<210> 59
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 59

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Ser Leu Ser Cys Ala Ala Ser Gly Arg Ser Phe Thr Gly Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Gln Leu Leu
35 40 45

Ala Ser Ile Ser Trp Arg Gly Asp Asn Thr Tyr Tyr Lys Glu Ser Val
50 55 60

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

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

Ala Ala Ser Ile Leu Pro Leu Ser Asp Asp Pro Gly Trp Asn Thr Asn
100 105 110

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 60
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 60

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 61
<211> 117
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 61

Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Gly Gly Gly
1 5 10 15

Ser Leu Arg Leu Ala Cys Ala Ala Ser Glu Arg Ile Phe Asp Leu Asn
20 25 30

Leu Met Gly Trp Tyr Arg Gln Gly Pro Gly Asn Glu Arg Glu Leu Val
35 40 45

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

Lys Gly Arg Phe Thr Ile Ser Met Asp Tyr Thr Lys Gln Thr Val Tyr
65 70 75 80

Leu His Met Asn Ser Leu Arg Pro Glu Asp Thr Gly Leu Tyr Tyr Cys
85 90 95

Lys Ile Arg Arg Thr Trp His Ser Glu Leu Trp Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser
115

<210> 62
<211> 116
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 62

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Glu Gly Gly
1 5 10 15

Ser Leu Arg Leu Ala Cys Ala Ala Ser Glu Arg Ile Trp Asp Ile Asn
20 25 30

Leu Leu Gly Trp Tyr Arg Gln Gly Pro Gly Asn Glu Arg Glu Leu Val
35 40 45

Ala Thr Ile Thr Val Gly Asp Ser Thr Ser Tyr Ala Asp Ser Val Lys
50 55 60

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

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

Ile Arg Arg Thr Trp His Ser Glu Leu Trp Gly Gln Gly Thr Gln Val
100 105 110

Thr Val Ser Ser
115

<210> 63
<211> 115

<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 63

Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val
35 40 45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
50 55 60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser
115

<210> 64
<211> 116
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 64

Ala Val Gln Leu Val Asp 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 Ser Phe Gly Ser Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Tyr Pro Gly Lys Glu Pro Glu Trp Val
35 40 45

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

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

```
Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Glu Tyr Tyr Cys
                85                  90                  95

Thr Ile Gly Arg Ser Val Ser Arg Ser Arg Thr Gln Gly Thr Gln Val
            100                 105                 110

Thr Val Ser Ser
        115
```

<210> 65
<211> 114
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 65

```
Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Thr Cys Thr Ala Ser Gly Phe Thr Phe Arg Ser Phe
            20                  25                  30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Asp Gln Glu Trp Val
        35                  40                  45

Ser Ala Ile Ser Ala Asp Ser Ser Thr Lys Asn Tyr Ala Asp Ser Val
    50                  55                  60

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

Leu Glu Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Val Ile Gly Arg Gly Ser Pro Ser Ser Pro Gly Thr Gln Val Thr Val
            100                 105                 110

Ser Ser
```

<210> 66
<211> 114
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 66

```
Gln Val Gln Leu Ala Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15
```

Ser Leu Arg Leu Thr Cys Thr Ala Ser Gly Phe Thr Phe Gly Ser Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Ala Asp Ser Ser Asp Lys Arg Tyr Ala Asp Ser Val
50 55 60

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

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

Val Ile Gly Arg Gly Ser Pro Ala Ser Gln Gly Thr Gln Val Thr Val
100 105 110

Ser Ser

<210> 67
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 67

Gln 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 Thr Phe Ser Asn Tyr
20 25 30

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

Ser Arg Asp Ile Ser Thr Gly Gly Gly Tyr Ser Tyr Tyr Ala Asp Ser
50 55 60

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

Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr
85 90 95

Cys Ala Lys Asp Arg Glu Ala Gln Val Asp Thr Leu Asp Phe Asp Tyr
100 105 110

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 68
<211> 9
<212> PRT
<213> Artificial

<220>
<223> linker

<400> 68

Gly Gly Gly Gly Ser Gly Gly Gly Ser
1 5

<210> 69
<211> 30
<212> PRT
<213> Artificial

<220>
<223> linker

<400> 69

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
20 25 30

<210> 70
<211> 239
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 70

Gln 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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr
100 105 110

```
Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Val Gln Leu
        115                 120                 125

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu
    130                 135                 140

Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp Tyr Trp Met Tyr Trp
145                 150                 155                 160

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Glu Ile Asn
                165                 170                 175

Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser Val Lys Gly Arg Phe
            180                 185                 190

Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn
        195                 200                 205

Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Arg Ser Pro
    210                 215                 220

Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
225                 230                 235
```

<210> 71
<211> 267
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 71

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro
            20                  25                  30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
        35                  40                  45

Glu Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
    50                  55                  60

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

Lys Asn Thr Val Asp Leu Leu Met Asn Ser Leu Lys Pro Glu Asp Thr
                85                  90                  95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
```

100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Val Gln Leu Val Glu
130 135 140

Ser Gly Gly Gly Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys
145 150 155 160

Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro Ser Gly Tyr Thr Tyr Thr
165 170 175

Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
180 185 190

Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr Tyr Ala Asp Ser Val Lys
195 200 205

Gly Arg Phe Thr Ile Ser Arg Asp Ile Ala Lys Asn Thr Val Asp Leu
210 215 220

Leu Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala
225 230 235 240

Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Gly Ser Tyr Asn Tyr
245 250 255

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
260 265

<210> 72
<211> 255
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 72

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val
    130                 135                 140

Gln Ala Gly Gly Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser
145                 150                 155                 160

Leu Ser Asn Tyr Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu
                165                 170                 175

Arg Glu Leu Leu Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr
            180                 185                 190

Lys Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ala Lys
        195                 200                 205

Asn Thr Ile Tyr Leu Gln Met Asn Arg Leu Lys Pro Glu Asp Thr Ala
    210                 215                 220

Val Tyr Tyr Cys Ala Ala Ser Ile Leu Pro Leu Ser Asp Asp Pro Gly
225                 230                 235                 240

Trp Asn Thr Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
                245                 250                 255


<210>  73
<211>  260
<212>  PRT
<213>  Artificial

<220>
<223>  nanobody construct

<400>  73

Gln 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 Thr Phe Ser Asp Tyr
            20                  25                  30

Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
```

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
130 135 140

Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
145 150 155 160

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp
165 170 175

Tyr Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
180 185 190

Val Ser Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser
195 200 205

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu
210 215 220

Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr
225 230 235 240

Cys Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val
245 250 255

Thr Val Ser Ser
260

<210> 74
<211> 288
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 74

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Glu Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Leu Met Asn Ser Leu Lys Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
145 150 155 160

Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly Ser
165 170 175

Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro Ser
180 185 190

Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu
195 200 205

Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr Tyr
210 215 220

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Ile Ala Lys
225 230 235 240

Asn Thr Val Asp Leu Leu Met Asn Ser Leu Lys Pro Glu Asp Thr Ala
245 250 255

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

Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
275 280 285

<210> 75
<211> 276
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 75

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser
145 150 155 160

Gly Gly Gly Leu Val Gln Ala Gly Gly Ser Leu Ser Leu Ser Cys Ser
165 170 175

Ala Ser Gly Arg Ser Leu Ser Asn Tyr Tyr Met Gly Trp Phe Arg Gln
180 185 190

Ala Pro Gly Lys Glu Arg Glu Leu Leu Gly Asn Ile Ser Trp Arg Gly
195 200 205

Tyr Asn Ile Tyr Tyr Lys Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
210 215 220

Arg Asp Asp Ala Lys Asn Thr Ile Tyr Leu Gln Met Asn Arg Leu Lys
225 230 235 240

```
Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala Ser Ile Leu Pro Leu
                245                 250                 255

Ser Asp Asp Pro Gly Trp Asn Thr Tyr Trp Gly Gln Gly Thr Gln Val
            260                 265                 270

Thr Val Ser Ser
        275


<210>  76
<211>  115
<212>  PRT
<213>  Artificial

<220>
<223>  nanobody construct

<400>  76

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 Thr Phe Ser Asp Tyr
            20                  25                  30

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

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

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

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

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr
            100                 105                 110

Val Ser Ser
        115


<210>  77
<211>  115
<212>  PRT
<213>  Artificial

<220>
<223>  nanobody construct

<400>  77

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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 78
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 78

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 Arg Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 79
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 79

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 Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 80
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 80

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 Arg Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 81
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 81

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 Arg Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 82
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 82

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 Arg Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
115 120 125

Ser

<210> 83
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 83

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 Arg Ser Leu Ser Asn Tyr
20 25 30

```
Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu
        35                  40                  45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
    50                  55                  60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 84
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 84

```
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 Thr Phe Ser Asn Tyr
            20                  25                  30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu
        35                  40                  45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
    50                  55                  60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 85
<211> 123

<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 85

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 Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 86
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 86

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 Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

```
Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

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

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 87
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 87

```
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 Thr Phe Arg Ser Phe
            20                  25                  30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val
        35                  40                  45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 88
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 88

```
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 Thr Phe Ser Ser Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val
35 40 45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
50 55 60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser
115

<210> 89
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 89

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 Thr Phe Arg Ser Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
50 55 60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser
115

<210> 90
<211> 363
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 90

Gln 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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu
115 120 125

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn Ser Leu Arg Leu
130 135 140

Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Phe Gly Met Ser Trp
145 150 155 160

Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val Ser Ser Ile Ser
165 170 175

Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe
180 185 190

Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn
195 200 205

Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly
210 215 220

Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr Val Ser Ser Gly
225 230 235 240

```
Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly
                245                 250                 255

Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
            260                 265                 270

Ser Gly Phe Thr Phe Ser Asp Tyr Trp Met Tyr Trp Val Arg Gln Ala
        275                 280                 285

Pro Gly Lys Gly Leu Glu Trp Val Ser Glu Ile Asn Thr Asn Gly Leu
    290                 295                 300

Ile Thr Lys Tyr Pro Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg
305                 310                 315                 320

Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Pro
                325                 330                 335

Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Arg Ser Pro Ser Gly Phe Asn
            340                 345                 350

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        355                 360
```

<210> 91
<211> 391
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 91

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro
            20                  25                  30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
        35                  40                  45

Glu Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
    50                  55                  60

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

Lys Asn Thr Val Asp Leu Leu Met Asn Ser Leu Lys Pro Glu Asp Thr
                85                  90                  95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
```

100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu
130 135 140

Ser Gly Gly Gly Leu Val Gln Ala Gly Gly Ser Leu Arg Leu Ser Cys
145 150 155 160

Ala Ala Ser Gly Arg Thr Phe Ser Glu Pro Ser Gly Tyr Thr Tyr Thr
165 170 175

Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
180 185 190

Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr Tyr Ala Asp Ser Val Lys
195 200 205

Gly Arg Phe Thr Ile Ser Arg Asp Ile Ala Lys Asn Thr Val Asp Leu
210 215 220

Leu Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala
225 230 235 240

Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Gly Ser Tyr Asn Tyr
245 250 255

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser
260 265 270

Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val
275 280 285

Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr
290 295 300

Phe Arg Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Glu
305 310 315 320

Pro Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr
325 330 335

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys
340 345 350

Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly
370 375 380

Thr Gln Val Thr Val Ser Ser
385 390

<210> 92
<211> 379
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 92

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val
130 135 140

Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr
145 150 155 160

Phe Arg Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Glu
165 170 175

Pro Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr
180 185 190

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys
195 200 205

Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala

210 215 220

Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly
225 230 235 240

Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
260 265 270

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser Asn Tyr
275 280 285

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu
290 295 300

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
305 310 315 320

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ala Lys Asn Thr Ile Tyr
325 330 335

Leu Gln Met Asn Arg Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
340 345 350

Ala Ala Ser Ile Leu Pro Leu Ser Asp Asp Pro Gly Trp Asn Thr Tyr
355 360 365

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
370 375

<210> 93
<211> 384
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 93

Gln 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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
130 135 140

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
145 150 155 160

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp
165 170 175

Tyr Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
180 185 190

Val Ser Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser
195 200 205

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu
210 215 220

Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr
225 230 235 240

Cys Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Gln Val
245 250 255

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn Ser Leu Arg
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Phe Gly Met Ser
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val Ser Ser Ile
305 310 315 320

Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg
325 330 335

Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met

340 345 350

Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly
355 360 365

Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr Val Ser Ser
370 375 380

<210> 94
<211> 400
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 94

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
130 135 140

Gly Gly Ser Ser Gly Gly Gly Gly Ser Glu Val Gln Val Val Glu Ser
145 150 155 160

Gly Gly Gly Leu Val Gln Ala Gly Gly Ser Leu Ser Leu Ser Cys Ser
165 170 175

Ala Ser Gly Arg Ser Leu Ser Asn Tyr Tyr Met Gly Trp Phe Arg Gln
180 185 190

Ala Pro Gly Lys Glu Arg Glu Leu Leu Gly Asn Ile Ser Trp Arg Gly
195 200 205

Tyr Asn Ile Tyr Tyr Lys Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
210 215 220

Arg Asp Asp Ala Lys Asn Thr Ile Tyr Leu Gln Met Asn Arg Leu Lys
225 230 235 240

Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala Ser Ile Leu Pro Leu
245 250 255

Ser Asp Asp Pro Gly Trp Asn Thr Tyr Trp Gly Gln Gly Thr Gln Val
260 265 270

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln
275 280 285

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn Ser Leu Arg
290 295 300

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Phe Gly Met Ser
305 310 315 320

Trp Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val Ser Ser Ile
325 330 335

Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg
340 345 350

Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met
355 360 365

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

Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Gln Val Thr Val Ser Ser
385 390 395 400

<210> 95
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 95

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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

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

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 96
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 96

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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

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

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 97
<211> 129

<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 97

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 Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 98
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 98

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 Thr Phe Ser Glu Pro
20 25 30

Ser Gly Tyr Thr Tyr Thr Ile Gly Trp Phe Arg Gln Ala Pro Gly Lys
35 40 45

Gly Arg Glu Phe Val Ala Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr
50 55 60

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

Lys Asn Thr Val Asp Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr
85 90 95

Ala Val Tyr Tyr Cys Ala Ala Arg Asp Gly Ile Pro Thr Ser Arg Ser
100 105 110

Val Gly Ser Tyr Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
115 120 125

Ser

<210> 99
<211> 123
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 99

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 Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 100
<211> 115
<212> PRT
<213> Artificial

<220>

<223> nanobody construct

<400> 100

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Phe
            20                  25                  30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 101
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 101

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Phe
            20                  25                  30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
    50                  55                  60

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

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

```
Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 102
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 102

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 103
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 103

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30
```

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
50 55 60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 104
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 104

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val
50 55 60

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

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

Thr Ile Gly Gly Ser Leu Ser Arg Ser Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 105
<211> 130
<212> PRT

<213> Artificial

<220>
<223> nanobody

<400> 105

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Asp
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ile Ile Phe Gly Ser His
20 25 30

Val Ala Ala Trp Phe Arg Gln Ala Pro Gly Arg Glu Arg Glu Phe Val
35 40 45

Ala Glu Ile Arg Pro Ser Gly Asp Phe Gly Pro Glu Gly Glu Phe Glu
50 55 60

His Val Thr Ala Ser Leu Lys Gly Arg Phe Thr Ile Ala Lys Asn Ser
65 70 75 80

Val Asp Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp
85 90 95

Thr Ala Val Tyr Tyr Cys Ala Ala Ala Pro Tyr Arg Gly Gly Arg Asp
100 105 110

Tyr Arg Trp Glu Tyr Glu Tyr Glu Tyr Trp Gly Gln Gly Thr Gln Val
115 120 125

Thr Val
130

<210> 106
<211> 122
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 106

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 Lys Asn Ala Gly Ser Thr Ser Asn Ala Tyr
20 25 30

Ala Thr Gly Trp Phe Arg Arg Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Gly Ile Gln Trp Ser Gly Gly Asp Ala Phe Tyr Arg Asn Ser Val
50 55 60

Lys Gly Arg Phe Arg Ile Thr Arg Asp Pro Asp Asn Thr Val Tyr Leu
65 70 75 80

Gln Met Asn Asp Leu Lys Pro Glu Asp Thr Ala Ile Tyr Tyr Cys Ala
85 90 95

Gln Lys Leu Ser Pro Tyr Tyr Asn Asp Phe Asp Ser Ser Asn Tyr Glu
100 105 110

Tyr Trp Gly Gln Gly Thr Gln Val Thr Val
115 120

<210> 107
<211> 119
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 107

Glu Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Gln Leu Phe Ser Thr Asn
20 25 30

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

Ala Thr Ile Thr Asp Asp Gly Thr Thr Asp Tyr Gly Asp Asp Val Lys
50 55 60

Gly Arg Phe Val Ile Ser Arg Glu Gly Glu Met Val Tyr Leu Glu Met
65 70 75 80

Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Asn Ile Asn
85 90 95

Arg Leu Arg Ser Thr Trp Gly Ile Arg Tyr Asp Val Trp Gly Gln Gly
100 105 110

Thr Gln Val Thr Val Ser Ser
115

<210> 108
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 108

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 Val Val Ser Gly Phe Thr Phe Ser Thr Thr
20 25 30

Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Phe Glu Glu Trp Val
35 40 45

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Gly Arg Arg Gly Tyr Gly Arg Asp Arg Ser Lys Gly Ile Gln Val Thr
100 105 110

Val Ala Ser
115

<210> 109
<211> 121
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 109

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Thr Val Gln Ala Gly Asp
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Ser Phe Ser Ser Val
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gln Arg Glu Phe Leu
35 40 45

Ala Gly Val Gly Tyr Asp Gly Ser Ser Ile Arg Tyr Ala Glu Ser Val
50 55 60

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

Leu Gln Met Glu Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

Thr Ala Glu Pro Ile Gly Ala Tyr Glu Gly Leu Trp Thr Tyr Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 110
<211> 124
<212> PRT
<213> Artificial

<220>
<223> nanobody

<220>
<221> misc_feature
<222> (1)..(4)
<223> unknown amino acid residues, probably EVQL, QVQL or a similar sequence

<400> 110

Xaa Xaa Xaa Xaa Val Glu Ser Gly Gly Gly Leu Met Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Met Phe Ser Asp Ser
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Thr Ile Ser Trp Asn Gly Gly Ser Ser Ser Tyr Ala Asp Phe Val
50 55 60

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

Leu Gln Met Asn Gly Leu Thr Pro Gln Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Ala Gly Ser Tyr Ser Asn Gly Asn Pro His Arg Phe Ser Gln Tyr Gln
100 105 110

Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 111
<211> 120
<212> PRT
<213> Artificial

<220>
<223> nanobody

<220>
<221> MISC_FEATURE
<222> (77)..(77)
<223> Unknown amino acid residue

<400> 111

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Gly Thr Tyr
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

Ala Ala Ile Ser Trp Gly Gly Gly Ser Ile Val Tyr Ala Glu Ser Ala
50 55 60

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

Leu Gln Met Asp Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Ala Ala Asn Asn Ile Ala Thr Leu Arg Gln Gly Ser Trp Gly Gln
100 105 110

Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 112
<211> 127
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 112

Glu Val Gln Leu Val Glu Ser Gly Gly Glu Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Thr Ala Ser Gly Arg Asn Phe Val Thr Tyr
20 25 30

Ala Met Ser Trp Phe Arg Arg Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

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

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

Leu Arg Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Asp Tyr Tyr Cys
85 90 95

Ala Val Val Gln Val Ile Asp Pro Ser Trp Ser Gly Val Asn Leu Asp
100 105 110

```
Asp Tyr Asp Tyr Leu Gly Ser Gly Thr Gln Val Thr Val Ser Ser
        115                 120                 125


<210>  113
<211>  124
<212>  PRT
<213>  Artificial

<220>
<223>  nanobody

<400>  113

Glu Val Gln Leu Val Glu Ser Gly Gly Arg Leu Val Gln Pro Gly Gly
1               5                   10                  15


Ser Leu Arg Leu Ser Cys Lys Asn Ala Gly Ser Thr Ser Asn Ala Tyr
            20                  25                  30


Ala Thr Gly Trp Phe Arg Arg Ala Pro Gly Lys Glu Arg Glu Phe Val
        35                  40                  45


Ala Gly Ile Gln Trp Ser Gly Gly Asp Ala Phe Tyr Arg Asn Ser Val
    50                  55                  60


Lys Gly Arg Phe Arg Ile Thr Arg Asp Pro Asp Asn Thr Val Tyr Leu
65                  70                  75                  80


Gln Met Asn Asp Leu Lys Pro Glu Asp Thr Ala Ile Tyr Tyr Cys Ala
                85                  90                  95


Gln Lys Leu Ser Pro Tyr Tyr Asn Asp Phe Asp Ser Ser Asn Tyr Glu
            100                 105                 110


Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120


<210>  114
<211>  115
<212>  PRT
<213>  Artificial

<220>
<223>  nanobody

<400>  114

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 Ala Thr Ile Ser Ser Ile Val
            20                  25                  30


Met Leu Gly Trp Tyr Arg Gln Ala Pro Gly Lys Gln Arg Glu Trp Val
        35                  40                  45
```

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

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

Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Phe Cys Asn
85 90 95

Ala Val Pro Pro Arg Asp Asp Tyr Trp Gly Gln Gly Thr Gln Val Thr
100 105 110

Val Ser Ser
115

<210> 115
<211> 121
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 115

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Gln Thr Ser Ser Ser Tyr
20 25 30

Asp Met Gly Trp Phe Arg Gln Ala Pro Gly Glu Gly Arg Glu Phe Val
35 40 45

Ala Arg Ile Ser Gly Ser Asp Gly Ser Thr Tyr Tyr Ser Asp Arg Ala
50 55 60

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Thr Lys Asn Met Val Tyr
65 70 75 80

Leu Gln Met Asp Arg Leu Lys Pro Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Arg Val Pro Arg Tyr Glu Asn Gln Trp Ser Ser Tyr Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 116
<211> 127
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 116

```
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 Ser Thr Phe Ser Thr Tyr
            20                  25                  30

Asp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Gly Ile Asp Ser Gly Gly Gly Ser Pro Met Tyr Val Asp Ser Val
    50                  55                  60

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

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

Ala Lys Phe Ser Thr Gly Ala Asp Gly Gly Ser Trp Tyr Trp Ser Tyr
            100                 105                 110

Gly Met Asp Ser Trp Gly Lys Gly Thr Gln Val Thr Val Ser Ser
        115                 120                 125
```

<210> 117
<211> 121
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 117

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Asp
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Glu Ala Ser Glu Arg Ser Ser Asn Arg Tyr
            20                  25                  30

Asn Met Ala Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Leu
        35                  40                  45

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

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

Leu Gln Met Asn Asn Leu Lys Pro Glu Asp Thr Ala Ile Tyr Tyr Cys
                85                  90                  95
```

```
Ala Ala Gly Gly Trp Gly Thr Thr Gln Tyr Asp Tyr Asp Tyr Trp Gly
            100                 105                 110

Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 118
<211> 117
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 118

```
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 Val Cys Val Ser Ser Gly Cys Thr Phe Ser
            20                  25                  30

Ala Tyr Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Ala Glu Glu
        35                  40                  45

Trp Val Ser Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asp
    50                  55                  60

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

Leu Tyr Leu Gln Met Asn Ser Leu Gly Pro Glu Asp Thr Ala Met Tyr
                85                  90                  95

Tyr Cys Gln Arg Arg Gly Tyr Ala Leu Asp Arg Gly Gln Gly Thr Gln
            100                 105                 110

Val Thr Val Ser Ser
        115
```

<210> 119
<211> 129
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 119

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Asp
1               5                   10                  15

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

Ala Met Gly Trp Phe Arg Gln Pro Pro Gly Lys Glu Arg Glu Phe Val
```

35 40 45

Ala Ser Ile Lys Trp Asn Gly Asn Asn Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

Thr Val Ser Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Asp
85 90 95

Tyr Tyr Cys Ala Ala Asp Ser Ser His Tyr Ser Tyr Val Tyr Ser Lys
100 105 110

Ala Tyr Glu Tyr Asp Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser
115 120 125

Ser

<210> 120
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 120

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 Val Phe Ser Gly Phe Ala Phe Ser Ala Ser
20 25 30

Ser Met Ala Trp Val Arg Gln Ala Pro Gly Lys Tyr Glu Glu Trp Val
35 40 45

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

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

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

Gly Arg Arg Gly Tyr Gly Arg Asp Arg Ser Gln Gly Ile Gln Val Thr
100 105 110

Val Ser Ser
115

<210> 121
<211> 127
<212> PRT
<213> Artificial

<220>
<223> nanobody

<220>
<221> MISC_FEATURE
<222> (119)..(119)
<223> Unknown amino acid residue

<400> 121

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Ser Tyr
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Gly Lys Asn Thr Val His
65 70 75 80

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr His Cys
85 90 95

Ala Val Val Gln Pro Tyr Ser Gly Gly Asp Tyr Tyr Thr Gly Val Glu
100 105 110

Glu Tyr Asp Tyr Trp Gly Xaa Gly Thr Gln Val Thr Val Ser Ser
115 120 125

<210> 122
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 122

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 Val Val Ser Gly Phe Thr Phe Ser Ala Thr
20 25 30

Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Ala Glu Glu Trp Val
35 40 45

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

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

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

Gly Arg Arg Gly Tyr Gly Arg Asp Arg Ser Arg Gly Ile Gln Val Thr
100 105 110

Val Ser Ser
115

<210> 123
<211> 121
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 123

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Gly Ala Phe Ser Asn Tyr
20 25 30

Asp Val Gly Trp Phe Arg Gln Ala Pro Gly Glu Gly Arg Glu Ile Val
35 40 45

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

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

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

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

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 124
<211> 117
<212> PRT
<213> Artificial

<220>

<223> nanobody

<400> 124

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 Glu Cys Val Ser Ser Gly Cys Thr Phe Ser
20 25 30

Ala Tyr Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Ala Glu Glu
35 40 45

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

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

Leu Tyr Leu Gln Met Asn Ser Leu Gly Pro Glu Asp Thr Ala Met Tyr
85 90 95

Tyr Cys Gln Arg Arg Gly Tyr Ala Leu Asp Arg Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser
115

<210> 125
<211> 121
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 125

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Gln Thr Ser Ser Thr Ala
20 25 30

Asp Met Gly Trp Phe Arg Gln Pro Pro Gly Lys Gly Arg Glu Phe Val
35 40 45

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

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

Leu Gln Met Asp Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

```
Arg Ser Pro Arg Tyr Ala Asp Gln Trp Ser Ala Tyr Asp Tyr Trp Gly
            100                 105                 110

Gln Gly Thr Gln Val Thr Val Ser Ser
        115                 120
```

<210> 126
<211> 115
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 126

```
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 Val Val Ser Gly Phe Thr Phe Ser Thr Thr
            20                  25                  30

Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Phe Glu Glu Trp Val
        35                  40                  45

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

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

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95

Gly Arg Arg Gly Tyr Gly Arg Asp Arg Ser Lys Gly Ile Gln Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 127
<211> 118
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 127

```
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 Val Ala Ser Ala Ser Gly Val Lys Val Asn
            20                  25                  30
```

Asp Met Gly Trp Tyr Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Val
35 40 45

Ala Thr Ile Thr Asp Asp Gly Arg Thr Asn Tyr Glu Asp Phe Ala Lys
50 55 60

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

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

Ala Arg Thr Tyr Trp Ala His Leu Pro Thr Tyr Trp Gly Gln Gly Thr
100 105 110

Gln Val Thr Val Ser Ser
115

<210> 128
<211> 121
<212> PRT
<213> Artificial

<220>
<223> nanobody

<400> 128

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Ser Phe Gly Ser Val
20 25 30

Ala Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45

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

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

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

Ala Ala Glu Pro Leu Ala Arg Tyr Glu Gly Leu Trp Thr Tyr Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 129
<211> 121
<212> PRT

<213> Artificial

<220>
<223> nanobody

<400> 129

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Ala
1 5 10 15

Ser Leu Arg Leu Ser Cys Thr Thr Ser Thr Arg Thr Asn Asp Arg Phe
20 25 30

Asn Met Ala Trp Phe His Gln Ala Pro Gly Lys Asp Arg Glu Phe Val
35 40 45

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

Lys Gly Arg Phe Thr Val Ser Arg Asp Ser Ala Glu Asn Thr Val Val
65 70 75 80

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

Ala Ala Gly Gly Trp Gly Ile Ser Gln Ser Asp Tyr Asp Leu Trp Gly
100 105 110

Gln Gly Thr Gln Val Thr Val Ser Ser
115 120

<210> 130
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 130

Gln 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 Thr Phe Ser
20 25 30

<210> 131
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 131

Gln Val Gln Leu Gln Glu Ser Gly Gly Gly Met Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Gly
20 25 30

<210> 132
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 132

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 Thr Ser Gly Phe Asp Phe Ser
20 25 30

<210> 133
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 133

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser
20 25 30

<210> 134
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 134

Gln Val Lys Leu Glu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asp
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser
20 25 30

<210> 135
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 135

```
Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asp
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser
            20                  25                  30
```

<210> 136
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 136

```
Ala Val Gln Leu Val Asp Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser
            20                  25                  30
```

<210> 137
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 137

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15

Ser Leu Ser Leu Ser Cys Ala Ala Ser Gly Arg Ser Phe Thr
            20                  25                  30
```

<210> 138
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 138

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
1               5                   10                  15

Ser Leu Ser Leu Ser Cys Ser Ala Ser Gly Arg Ser Leu Ser
            20                  25                  30
```

<210> 139
<211> 30
<212> PRT
<213> Artificial

<220>

<223> FR1 element

<400> 139

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Asp
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gln Ile Ile Phe Gly
20 25 30

<210> 140
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 140

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 Lys Asn Ala Gly Ser Thr Ser Asn
20 25 30

<210> 141
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 141

Glu Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Gln Leu Phe Ser
20 25 30

<210> 142
<211> 30
<212> PRT
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Val Val Ser Gly Phe Thr Phe Ser
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Thr Val Gln Ala Gly Asp
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Ser Phe Ser
20 25 30

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Xaa Xaa Xaa Xaa Val Glu Ser Gly Gly Gly Leu Met Gln Pro Gly Gly
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Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Met Phe Ser
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Gly
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Glu Val Gln Leu Val Glu Ser Gly Gly Glu Leu Val Gln Ala Gly Gly

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Ser Leu Lys Leu Ser Cys Thr Ala Ser Gly Arg Asn Phe Val
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Glu Val Gln Leu Val Glu Ser Gly Gly Arg Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Lys Asn Ala Gly Ser Thr Ser Asn
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Gln Thr Ser Ser
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ser Thr Phe Ser
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Asp
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Ser Leu Arg Leu Ser Cys Glu Ala Ser Glu Arg Ser Ser Asn
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Val Cys Val Ser Ser Gly Cys Thr
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Asp
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Ser Leu Thr Leu Ser Cys Ala Ser Ser Gly Arg Gly Phe Tyr
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Ser Leu Arg Leu Ser Cys Val Phe Ser Gly Phe Ala Phe Ser
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Val Val Ser Gly Phe Thr Phe Ser
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Gly Ala Phe Ser
20 25 30

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Glu Cys Val Ser Ser Gly Cys Thr
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Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Gln Thr Ser Ser
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Val Val Ser Gly Phe Thr Phe Ser
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Val Ala Ser Ala Ser Gly Val Lys
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Ser Phe Gly
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Ala
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Ser Leu Arg Leu Ser Cys Thr Thr Ser Thr Arg Thr Asn
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Asp Tyr Trp Met Tyr
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Val Ser Trp Met Tyr
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Val Ser Trp Met Tyr
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Glu Pro Ser Gly Tyr Thr Tyr Thr Ile Gly
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Asp Tyr Ser Gly Tyr Thr Tyr Thr Val Gly
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Asp Tyr Ser Gly Tyr Thr Tyr Thr Val Gly
1 5 10

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

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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
1 5 10

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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Gln Leu Leu Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Leu Gly
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Trp Phe Arg Gln Ala Pro Gly Arg Glu Arg Glu Phe Val Ala
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Trp Phe Arg Arg Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Tyr Arg Arg Ala Pro Gly Lys Gln Arg Glu Leu Val Ala
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Trp Val Arg Gln Ala Pro Gly Lys Phe Glu Glu Trp Val Ser
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Trp Phe Arg Gln Ala Pro Gly Lys Gln Arg Glu Phe Leu Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Phe Arg Arg Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Phe Arg Arg Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Tyr Arg Gln Ala Pro Gly Lys Gln Arg Glu Trp Val Ala
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Trp Phe Arg Gln Ala Pro Gly Glu Gly Arg Glu Phe Val Ala
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Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Leu Ala
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Trp Val Arg Gln Ala Pro Gly Lys Ala Glu Glu Trp Val Ser
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Trp Phe Arg Gln Pro Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Val Arg Gln Ala Pro Gly Lys Tyr Glu Glu Trp Val Ser
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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Trp Val Arg Gln Ala Pro Gly Lys Ala Glu Glu Trp Val Ser
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Trp Phe Arg Gln Ala Pro Gly Glu Gly Arg Glu Ile Val Ala
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Trp Val Arg Gln Ala Pro Gly Lys Ala Glu Glu Phe Val Ser
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Trp Phe Arg Gln Pro Pro Gly Lys Gly Arg Glu Phe Val Ala
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Trp Val Arg Gln Ala Pro Gly Lys Phe Glu Glu Trp Val Ser
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Trp Tyr Arg Gln Ala Pro Gly Lys Glu Arg Glu Leu Val Ala
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Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala
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<400> 231

Trp Phe His Gln Ala Pro Gly Lys Asp Arg Glu Phe Val Ser
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<400> 232

Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser Val Lys
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Gly

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

Gly

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Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Val Asp Ser Val Lys
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Gly

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Arg Ile Tyr Trp Ser Ser Gly Leu Thr Tyr Tyr Ala Asp Ser Val Lys
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Gly

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Arg Ile Tyr Trp Ser Ser Gly Asn Thr Tyr Tyr Ala Asp Ser Val Lys
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Gly

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Arg Ile Tyr Trp Ser Ser Gly Asn Thr Tyr Tyr Ala Asp Ser Val Lys
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Gly

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Arg Ile Tyr Trp Ser Ser Ala Asn Thr Tyr Tyr Ala Asp Ser Val Lys
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Gly

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<400> 239

Ser Ile Ser Trp Arg Gly Asp Asn Thr Tyr Tyr Lys Glu Ser Val Lys
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Gly

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<400> 240

Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val Lys
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Gly

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<400> 241

Glu Ile Arg Pro Ser Gly Asp Phe Gly Pro Glu Gly Glu Phe Glu His
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Val Thr Ala Ser Leu Lys Gly
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<400> 242

Gly Ile Gln Trp Ser Gly Gly Asp Ala Phe Tyr Arg Asn Ser Val Lys
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Gly

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<400> 243

Thr Ile Thr Asp Asp Gly Thr Thr Asp Tyr Gly Asp Asp Val Lys Gly
1 5 10 15

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<400> 244

Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

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Gly Val Gly Tyr Asp Gly Ser Ser Ile Arg Tyr Ala Glu Ser Val Lys
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Gly

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Thr Ile Ser Trp Asn Gly Gly Ser Ser Ser Tyr Ala Asp Phe Val Lys
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Gly

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<400> 247

Ala Ile Ser Trp Gly Gly Gly Ser Ile Val Tyr Ala Glu Ser Ala Lys
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Gly

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Ser Ile Ser Trp Ser Gly Asp Thr Thr Tyr Tyr Ser Asn Ser Val Lys
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Gly

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<400> 249

Gly Ile Gln Trp Ser Gly Gly Asp Ala Phe Tyr Arg Asn Ser Val Lys
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Gly

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<212> PRT
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<400> 250

Ser Ile Thr Ile Gly Ser Arg Thr Asn Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 251
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Arg Ile Ser Gly Ser Asp Gly Ser Thr Tyr Tyr Ser Asp Arg Ala Lys
1 5 10 15

Asp

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Gly Ile Asp Ser Gly Gly Gly Ser Pro Met Tyr Val Asp Ser Val Lys
1 5 10 15

Gly

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<400> 253

Arg Val Asp Val Ser Gly Gly Asn Thr Leu Tyr Gly Asp Ser Val Lys
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Asp

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<211> 17
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<220>
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<400> 254

Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asp Ser Val Asn
1 5 10 15

Gly

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<400> 255

Ser Ile Lys Trp Asn Gly Asn Asn Thr Tyr Tyr Ala Asp Ser Val Arg
1 5 10 15

Gly

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<400> 256

Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asp Ser Val Gln
1 5 10 15

Gly

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<400> 257

Ala Ile Ser Trp Ser Gly Thr Ile Thr Asn Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

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Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

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Arg Ile Ser Gly Ser Gly Asp Ser Thr Tyr Ser Ser Asn Arg Ala Lys
1 5 10 15

Gly

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Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asn Ser Val Asn
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Gly

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<400> 261

Arg Ile Ser Gly Ile Asp Gly Thr Thr Tyr Tyr Asp Glu Pro Val Lys
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Gly

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<220>
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<400> 262

Phe Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 263
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<220>
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<400> 263

Thr Ile Thr Asp Asp Gly Arg Thr Asn Tyr Glu Asp Phe Ala Lys Gly
1 5 10 15

<210> 264
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<220>
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<400> 264

Ala Ile Gly Tyr Asp Gly Asn Ser Ile Arg Tyr Gly Asp Ser Val Lys
1 5 10 15

Gly

<210> 265
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<220>
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<400> 265

Arg Ile Asp Val Ala Gly Tyr Asn Thr Ala Tyr Gly Asp Phe Val Lys
1 5 10 15

Gly

<210> 266
<211> 32
<212> PRT
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<220>
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<400> 266

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Arg
20 25 30

<210> 267
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<220>
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<400> 267

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Arg
20 25 30

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<220>
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<400> 268

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asp Ser Leu Ile Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Arg
20 25 30

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Arg Phe Thr Ile Ser Arg Asp Ile Ala Lys Asn Thr Val Asp Leu Leu
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala
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Arg Phe Thr Ile Ser Arg Asp Ile Ala Lys Asn Thr Val Asp Leu Leu
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Met Asn Asn Leu Glu Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala
20 25 30

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Arg Phe Thr Ile Ser Arg Asp Ile Ala Lys Asn Thr Val Asp Leu Leu
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Met Asn Asn Leu Glu Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala
20 25 30

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Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Asp Leu Leu
1 5 10 15

Met Asn Cys Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala
20 25 30

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

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Arg Phe Thr Ile Ser Arg Asp Asp Ala Lys Asn Thr Ile Tyr Leu Gln
1 5 10 15

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

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<400> 277

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

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<400> 278

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Met Tyr Tyr Cys Gly Arg
20 25 30

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<400> 279

Arg Phe Thr Ile Ala Arg Gly Asn Arg Glu Ser Thr Val Phe Leu Gln
1 5 10 15

Met Glu Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr Phe Cys Thr Ala
20 25 30

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<400> 280

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr Leu Gln
1 5 10 15

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

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Met Asp Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala
20 25 30

<210> 282
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<400> 282

Arg Phe Thr Val Ser Arg Asp Asn Gly Lys Asn Thr Ala Tyr Leu Arg
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Asp Tyr Tyr Cys Ala Val
20 25 30

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<400> 283

Arg Phe Arg Ile Thr Arg Asp Pro Asp Asn Thr Val Tyr Leu Gln Met
1 5 10 15

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

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<400> 284

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Phe Cys Asn Ala
20 25 30

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<400> 285

Arg Phe Thr Ile Ser Arg Asp Asn Thr Lys Asn Met Val Tyr Leu Gln
1 5 10 15

Met Asp Arg Leu Lys Pro Asp Asp Thr Ala Val Tyr Tyr Cys Arg Val
20 25 30

<210> 286
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<400> 286

Arg Phe Thr Val Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
20 25 30

<210> 287
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<220>
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<400> 287

Arg Phe Thr Val Ser Arg Ile Asn Gly Lys Asn Ala Met Tyr Leu Gln
1 5 10 15

Met Asn Asn Leu Lys Pro Glu Asp Thr Ala Ile Tyr Tyr Cys Ala Ala
20 25 30

<210> 288
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<220>
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<400> 288

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Arg Phe Lys Ile Ser Arg Asp Asn Ala Lys Lys Thr Leu Tyr Leu Gln
1               5                   10                  15

Met Asn Ser Leu Gly Pro Glu Asp Thr Ala Met Tyr Tyr Cys Gln Arg
            20                  25                  30
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<400> 289

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Arg Phe Thr Ile Ser Arg Gly Asn Ala Lys Asn Thr Glu Asn Thr Val
1               5                   10                  15

Ser Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Asp Tyr Tyr
            20                  25                  30

Cys Ala Ala
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<400> 290

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Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1               5                   10                  15

Met Asn Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys Gly Arg
            20                  25                  30
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1               5                   10                  15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr His Cys Ala Val
            20                  25                  30
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Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
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Met Asp Asp Leu Gln Ser Glu Asp Thr Ala Met Tyr Tyr Cys Gly Arg
20 25 30

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<400> 293

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Arg Glu Asp Thr Ala Val Tyr Tyr Cys Arg Ala
20 25 30

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<400> 294

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

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Arg Phe Thr Ile Ser Arg Asp Lys Ala Gln Asn Thr Val Tyr Leu Gln
1 5 10 15

Met Asp Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Arg Ser
20 25 30

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Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Met Tyr Tyr Cys Gly Arg
20 25 30

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<400> 297

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Leu Pro Glu Asp Thr Ala Val Tyr Tyr Cys Asn Ala
20 25 30

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<220>
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<400> 298

Arg Phe Thr Ile Ser Arg Asp Asn Ile Lys Asn Thr Met Tyr Leu Glu
1 5 10 15

Met Glu Asn Leu Asn Ala Asp Asp Thr Ala Arg Tyr Leu Cys Ala Ala
20 25 30

<210> 299
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<220>
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<400> 299

Arg Phe Thr Val Ser Arg Asp Ser Ala Glu Asn Thr Val Val Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys Ala Ala

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Ser Pro Ser Gly Phe Asn
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<210> 301
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<400> 301

Ser Pro Ser Gly Ser Phe
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<400> 302

Ser Pro Ser Gly Ser Phe
1 5

<210> 303
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<212> PRT
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<400> 303

Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Gly Ser Tyr Asn Tyr
1 5 10 15

<210> 304
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<212> PRT
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<220>
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<400> 304

Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Glu Ser Tyr Asn Tyr
1 5 10 15

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<212> PRT
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<400> 305

Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Glu Ser Tyr Asn Tyr
1 5 10 15

<210> 306
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<212> PRT
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<400> 306

Arg Asp Gly Ile Pro Thr Ser Arg Ser Val Glu Ala Tyr Asn Tyr
1 5 10 15

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<400> 307

Ser Ile Leu Pro Leu Ser Asp Asp Pro Gly Trp Asn Thr Asn
1 5 10

<210> 308
<211> 14
<212> PRT
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<400> 308

Ser Ile Leu Pro Leu Ser Asp Asp Pro Gly Trp Asn Thr Tyr
1 5 10

<210> 309
<211> 17
<212> PRT
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<220>
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<400> 309

Ala Pro Tyr Arg Gly Gly Arg Asp Tyr Arg Trp Glu Tyr Glu Tyr Glu
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Tyr

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<220>
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<400> 310

Lys Leu Ser Pro Tyr Tyr Asn Asp Phe Asp Ser Ser Asn Tyr Glu Tyr
1 5 10 15

<210> 311
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<400> 311

Asn Arg Leu Arg Ser Thr Trp Gly Ile Arg Tyr Asp Val
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<400> 312

Arg Gly Tyr Gly Arg Asp
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Glu Pro Ile Gly Ala Tyr Glu Gly Leu Trp Thr Tyr
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<400> 314

Ser Tyr Ser Asn Gly Asn Pro His Arg Phe Ser Gln Tyr Gln Tyr
1 5 10 15

<210> 315
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<400> 315

Ala Asn Asn Ile Ala Thr Leu Arg Gln Gly Ser
1 5 10

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<220>
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<400> 316

Val Gln Val Ile Asp Pro Ser Trp Ser Gly Val Asn Leu Asp Asp Tyr
1 5 10 15

Asp Tyr

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<400> 317

Lys Leu Ser Pro Tyr Tyr Asn Asp Phe Asp Ser Ser Asn Tyr Glu Tyr
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<400> 318

Val Pro Pro Arg Asp Asp Tyr
1 5

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<400> 319

Pro Arg Tyr Glu Asn Gln Trp Ser Ser Tyr Asp Tyr
1 5 10

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<400> 320

Phe Ser Thr Gly Ala Asp Gly Gly Ser Trp Tyr Trp Ser Tyr Gly Met
1 5 10 15

Asp Ser

<210> 321
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<400> 321

Gly Gly Trp Gly Thr Thr Gln Tyr Asp Tyr Asp Tyr
1 5 10

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<400> 322

Arg Gly Tyr Ala Leu Asp
1 5

<210> 323
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<220>
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<400> 323

Asp Ser Ser His Tyr Ser Tyr Val Tyr Ser Lys Ala Tyr Glu Tyr Asp
1 5 10 15

Tyr

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<400> 324

Arg Gly Tyr Gly Arg Asp
1 5

<210> 325
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Val Gln Pro Tyr Ser Gly Gly Asp Tyr Tyr Thr Gly Val Glu Glu Tyr
1 5 10 15

Asp Tyr

<210> 326
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<400> 326

Arg Gly Tyr Gly Arg Asp
1 5

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Ala Arg Tyr Asn Gly Thr Trp Ser Ser Asn Asp Tyr
1 5 10

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<400> 328

Arg Gly Tyr Ala Leu Asp
1 5

<210> 329
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<400> 329

Pro Arg Tyr Ala Asp Gln Trp Ser Ala Tyr Asp Tyr
1 5 10

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<220>
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<400> 330

Arg Gly Tyr Gly Arg Asp
1 5

<210> 331
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<212> PRT
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<400> 331

Arg Thr Tyr Trp Ala His Leu Pro Thr Tyr
1 5 10

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<400> 332

Glu Pro Leu Ala Arg Tyr Glu Gly Leu Trp Thr Tyr
1 5 10

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<220>
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<400> 333

Gly Gly Trp Gly Ile Ser Gln Ser Asp Tyr Asp Leu
1 5 10

<210> 334
<211> 11
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<220>
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<400> 334

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 335
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<220>
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<400> 335

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 336

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 337

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser

1 5 10

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<400> 338

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 345

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Arg Ser Lys Gly Ile Gln Val Thr Val Ala Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 349

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 350

Leu Gly Ser Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 351

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

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<400> 354

Trp Gly Lys Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 355
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<220>
<223> FR4 element

<400> 355

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 356
<211> 11
<212> PRT
<213> Artificial

<220>
<223> FR4 element

<400> 356

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 357
<211> 11
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<220>
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<400> 357

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 358
<211> 11
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<220>
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<400> 358

Arg Ser Gln Gly Ile Gln Val Thr Val Ser Ser
1 5 10

<210> 359
<211> 11
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<220>
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<220>
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<222> (3)..(3)
<223> Unknown amino acid residue

<400> 359

Trp Gly Xaa Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 360
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<220>
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<400> 360

Arg Ser Arg Gly Ile Gln Val Thr Val Ser Ser
1 5 10

<210> 361
<211> 11
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<220>
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<400> 361

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 362
<211> 11
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<220>
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<400> 362

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 363
<211> 11
<212> PRT
<213> Artificial

<220>
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<400> 363

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 364
<211> 11
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<220>
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<400> 364

Arg Ser Lys Gly Ile Gln Val Thr Val Ser Ser
1 5 10

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<211> 11
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<220>
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<400> 365

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 366
<211> 11
<212> PRT
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<220>
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<400> 366

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 367
<211> 11
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<220>
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<400> 367

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 368
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 368

Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Gly Gly Gly
1 5 10 15

Ser Leu Arg Leu Ala Cys Ala Ala Ser Glu Arg Ile Phe Asp
20 25 30

<210> 369
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 369

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Glu Gly Gly
1 5 10 15

Ser Leu Arg Leu Ala Cys Ala Ala Ser Glu Arg Ile Trp Asp
20 25 30

<210> 370
<211> 30
<212> PRT
<213> Artificial

<220>
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<400> 370

Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg
20 25 30

<210> 371
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 371

Ala Val Gln Leu Val Asp 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 Ser Phe Gly
20 25 30

<210> 372
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 372

Ala Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Thr Cys Thr Ala Ser Gly Phe Thr Phe Arg
20 25 30

<210> 373
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 373

Gln Val Gln Leu Ala Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Thr Cys Thr Ala Ser Gly Phe Thr Phe Gly
20 25 30

<210> 374
<211> 30
<212> PRT
<213> Artificial

<220>
<223> FR1 element

<400> 374

Gln 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 Thr Phe Ser

<210> 375
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<212> PRT
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<220>
<223> CDR1 element

<400> 375

Leu Asn Leu Met Gly
1 5

<210> 376
<211> 5
<212> PRT
<213> Artificial

<220>
<223> CDR1 element

<400> 376

Ile Asn Leu Leu Gly
1 5

<210> 377
<211> 5
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<220>
<223> CDR1 element

<400> 377

Ser Phe Gly Met Ser
1 5

<210> 378
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<220>
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<400> 378

Ser Phe Gly Met Ser
1 5

<210> 379
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<220>
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<400> 379

Ser Phe Gly Met Ser
1 5

<210> 380
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<223> CDR1 element

<400> 380

Ser Phe Gly Met Ser
1 5

<210> 381
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<220>
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<400> 381

Asn Tyr Trp Met Tyr
1 5

<210> 382
<211> 14
<212> PRT
<213> Artificial

<220>
<223> FR2 element

<400> 382

Trp Tyr Arg Gln Gly Pro Gly Asn Glu Arg Glu Leu Val Ala
1 5 10

<210> 383
<211> 14
<212> PRT
<213> Artificial

<220>
<223> FR2 element

<400> 383

Trp Tyr Arg Gln Gly Pro Gly Asn Glu Arg Glu Leu Val Ala
1 5 10

<210> 384
<211> 14
<212> PRT
<213> Artificial

<220>
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<400> 384

Trp Val Arg Gln Ala Pro Gly Lys Glu Pro Glu Trp Val Ser
1 5 10

<210> 385
<211> 14
<212> PRT
<213> Artificial

<220>
<223> FR2 element

<400> 385

Trp Val Arg Gln Tyr Pro Gly Lys Glu Pro Glu Trp Val Ser
1 5 10

<210> 386
<211> 14
<212> PRT
<213> Artificial

<220>
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<400> 386

Trp Val Arg Gln Ala Pro Gly Lys Asp Gln Glu Trp Val Ser
1 5 10

<210> 387
<211> 14
<212> PRT
<213> Artificial

<220>
<223> FR2 element

<400> 387

Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val Ser
1 5 10

<210> 388
<211> 14
<212> PRT
<213> Artificial

<220>
<223> FR2 element

<400> 388

Trp Val Arg Val Ala Pro Gly Lys Gly Leu Glu Arg Ile Ser
1 5 10

<210> 389
<211> 17
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 389

Thr Cys Ile Thr Val Gly Asp Ser Thr Asn Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 390
<211> 16
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 390

Thr Ile Thr Val Gly Asp Ser Thr Ser Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 391
<211> 17
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 391

Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 392
<211> 17
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 392

Ser Ile Asn Gly Arg Gly Asp Asp Thr Arg Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 393
<211> 17
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 393

Ala Ile Ser Ala Asp Ser Ser Thr Lys Asn Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 394
<211> 17
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 394

Ala Ile Ser Ala Asp Ser Ser Asp Lys Arg Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 395
<211> 18
<212> PRT
<213> Artificial

<220>
<223> CDR2 element

<400> 395

Arg Asp Ile Ser Thr Gly Gly Gly Tyr Ser Tyr Tyr Ala Asp Ser Val
1 5 10 15

Lys Gly

<210> 396
<211> 32
<212> PRT
<213> Artificial

<220>
<223> FR3 element

<400> 396

Arg Phe Thr Ile Ser Met Asp Tyr Thr Lys Gln Thr Val Tyr Leu His
1 5 10 15

Met Asn Ser Leu Arg Pro Glu Asp Thr Gly Leu Tyr Tyr Cys Lys Ile
20 25 30

<210> 397
<211> 32
<212> PRT
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<220>

<223> FR3 element

<400> 397

Arg Phe Thr Ile Ser Arg Asp Tyr Asp Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Pro Glu Asp Thr Gly Leu Tyr Tyr Cys Lys Ile
20 25 30

<210> 398
<211> 32
<212> PRT
<213> Artificial

<220>
<223> FR3 element

<400> 398

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile
20 25 30

<210> 399
<211> 32
<212> PRT
<213> Artificial

<220>
<223> FR3 element

<400> 399

Arg Phe Ser Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Glu Tyr Tyr Cys Thr Ile
20 25 30

<210> 400
<211> 32
<212> PRT
<213> Artificial

<220>
<223> FR3 element

<400> 400

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Lys Met Leu Tyr Leu Glu
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Val Ile
20 25 30

<210> 401
<211> 32
<212> PRT

<213> Artificial

<220>
<223> FR3 element

<400> 401

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Lys Met Leu Tyr Leu Glu
1 5 10 15

Met Asn Ser Leu Lys Ser Glu Asp Thr Ala Val Tyr Tyr Cys Val Ile
20 25 30

<210> 402
<211> 32
<212> PRT
<213> Artificial

<220>
<223> FR3 element

<400> 402

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Leu Tyr Tyr Cys Ala Lys
20 25 30

<210> 403
<211> 8
<212> PRT
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<220>
<223> CDR3 element

<400> 403

Arg Arg Thr Trp His Ser Glu Leu
1 5

<210> 404
<211> 8
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 404

Arg Arg Thr Trp His Ser Glu Leu
1 5

<210> 405
<211> 6
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 405

Gly Gly Ser Leu Ser Arg
1 5

<210> 406
<211> 7
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 406

Gly Arg Ser Val Ser Arg Ser
1 5

<210> 407
<211> 5
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 407

Gly Arg Gly Ser Pro
1 5

<210> 408
<211> 5
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 408

Gly Arg Gly Ser Pro
1 5

<210> 409
<211> 13
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 409

Asp Arg Glu Ala Gln Val Asp Thr Leu Asp Phe Asp Tyr
1 5 10

<210> 410
<211> 11
<212> PRT
<213> Artificial

<220>
<223> FR4 element

<400> 410

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 411
<211> 11
<212> PRT
<213> Artificial

<220>
<223> FR4 element

<400> 411

Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 412
<211> 11
<212> PRT
<213> Artificial

<220>
<223> FR4 element

<400> 412

Ser Ser Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 413
<211> 11
<212> PRT
<213> Artificial

<220>
<223> FR4 element

<400> 413

Arg Thr Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 414
<211> 11
<212> PRT
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<220>
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<400> 414

Ser Ser Pro Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 415
<211> 11
<212> PRT
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<220>

<223> FR4 element

<400> 415

Ala Ser Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 416
<211> 11
<212> PRT
<213> Artificial

<220>
<223> FR4 element

<400> 416

Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser
1 5 10

<210> 417
<211> 363
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 417

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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

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

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu
115 120 125

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Asn Ser Leu Arg Leu
130 135 140

Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp

145 150 155 160

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser
165 170 175

Gly Ser Gly Ser Asp Thr Leu Tyr Ala Asp Ser Val Lys Gly Arg Phe
180 185 190

Thr Ile Ser Arg Asp Asn Ala Lys Thr Thr Leu Tyr Leu Gln Met Asn
195 200 205

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

Ser Leu Ser Arg Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser Gly
225 230 235 240

Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly
245 250 255

Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
260 265 270

Ser Gly Phe Thr Phe Ser Asp Tyr Trp Met Tyr Trp Val Arg Gln Ala
275 280 285

Pro Gly Lys Gly Leu Glu Trp Val Ser Glu Ile Asn Thr Asn Gly Leu
290 295 300

Ile Thr Lys Tyr Pro Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg
305 310 315 320

Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro
325 330 335

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

Arg Gly Gln Gly Thr Leu Val Thr Val Ser Ser
355 360

<210> 418
<211> 379
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 418

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 Arg Ser Leu Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu
35 40 45

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
50 55 60

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

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

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

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val
130 135 140

Gln Pro Gly Asn Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr
145 150 155 160

Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly
165 170 175

Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser Asp Thr Leu Tyr
180 185 190

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys
195 200 205

Thr Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala
210 215 220

Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg Ser Ser Gln Gly
225 230 235 240

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
260 265 270

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Ser Leu Ser Asn Tyr
275 280 285

Tyr Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Gly Arg Glu Leu Leu

290 295 300

Gly Asn Ile Ser Trp Arg Gly Tyr Asn Ile Tyr Tyr Lys Asp Ser Val
305 310 315 320

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ile Tyr
325 330 335

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys
340 345 350

Ala Ala Ser Ile Leu Pro Leu Ser Asp Asp Pro Gly Trp Asn Thr Tyr
355 360 365

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
370 375

<210> 419
<211> 260
<212> PRT
<213> Artificial

<220>
<223> nanobody construct

<400> 419

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 Thr Phe Ser Asp Tyr
20 25 30

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

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

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

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

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
130 135 140

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Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
145                 150                 155                 160

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp
                165                 170                 175

Tyr Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
            180                 185                 190

Val Ser Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser
        195                 200                 205

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu
    210                 215                 220

Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr
225                 230                 235                 240

Cys Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val
                245                 250                 255

Thr Val Ser Cys
            260
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<210> 420
<211> 264
<212> PRT
<213> Artificial

<220>
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<400> 420

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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 Thr Phe Ser Asp Tyr
            20                  25                  30

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

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

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

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

Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
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/al Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

;ly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
130 135 140

;er Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
145 150 155 160

;ly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp
165 170 175

Tyr Trp Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
180 185 190

/al Ser Glu Ile Asn Thr Asn Gly Leu Ile Thr Lys Tyr Pro Asp Ser
195 200 205

/al Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu
210 215 220

Tyr Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr
225 230 235 240

Cys Ala Arg Ser Pro Ser Gly Phe Asn Arg Gly Gln Gly Thr Leu Val
245 250 255

Thr Val Ser Ser Gly Gly Gly Cys
260

<210> 421
<211> 20
<212> DNA
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<220>
<223> oligonucleotide primer

<400> 421
ggataacaat ttcacacagg 20

<210> 422
<211> 55
<212> DNA
<213> Artificial

<220>
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<400> 422
tcagtaacct ggatccgcca ccgctgcctc caccgcctga ggagacggtg accag 55

<210> 423
<211> 39
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 423
aggttactga ggatccgagg tgcagctggt ggagtctgg 39

<210> 424
<211> 46
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 424
tcagtaacct tccggaaccg ccaccgcctg aggagacggt gacaag 46

<210> 425
<211> 48
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 425
aggttactga tccggaggcg gtagcgaggt gcagctggtg gagtctgg 48

<210> 426
<211> 19
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 426
cacgacgttg taaaacgac 19

<210> 427
<211> 43
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 427
atggtggtgt gcggccgcct attatgagga gacggtgacc agg 43

<210> 428
<211> 45
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 428
aggggtatct ctcgagaaaa gagaggtgca gctggtggag tctgg 45

<210> 429

<211> 56
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 429
gctaaagaag aaggggtatc tctcgagaaa agagaggtgc agctggtgga gtctgg 56

<210> 430
<211> 88
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 430
tcagtaacct ggatcccccg ccaccgctgc ctccaccgcc gctacccccg ccaccgctgc 60

ctccaccgcc tgaggagacg gtgacaag 88

<210> 431
<211> 69
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 431
aggttactga ggatccggcg gtggaggcag cggtggcggg ggtagcgagg tgcagctggt 60

ggagtctgg 69

<210> 432
<211> 41
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 432
atggtggtgt gaattcttat tagcaggaga cggtgacaag g 41

<210> 433
<211> 53
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 433
atggtggtgt gaattcttat tagcaacctc cacctgagga gacggtgaca agg 53

<210> 434
<211> 21
<212> DNA
<213> Artificial

<220>

<223> oligonucleotide primer

<400> 434
gactggttcc aattgacaag c 21

<210> 435
<211> 21
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide primer

<400> 435
gcaaatggca ttctgacatc c 21

<210> 436
<211> 13
<212> PRT
<213> Artificial

<220>
<223> CDR3 element

<400> 436

Ile Leu Pro Leu Ser Asp Asp Pro Gly Trp Asn Thr Tyr
1 5 10

<210> 437
<211> 4
<212> PRT
<213> Artificial

<220>
<223> nanobody element

<400> 437

Lys Glu Arg Glu
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<210> 438
<211> 4
<212> PRT
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Lys Gln Arg Glu
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Gly Leu Glu Trp
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Lys Glu Arg Glu Leu
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Lys Glu Arg Glu Phe
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Lys Gln Arg Glu Leu
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Lys Gln Arg Glu Phe
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Lys Glu Arg Glu Gly
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Thr Glu Arg Glu Leu
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Lys Glu Cys Glu Leu
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Arg Glu Arg Glu
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Arg Glu Arg Glu Gly
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Gln Glu Arg Glu
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Gln Glu Arg Glu Gly
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Lys Gly Arg Glu
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Lys Gly Arg Glu Gly
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Lys Asp Arg Glu Val
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Asp Glu Cys Lys Leu
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Asn Val Cys Glu Leu
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Gly Val Glu Trp
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Glu Pro Glu Trp
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Gly Leu Glu Arg
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Asp Gln Glu Trp
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Asp Leu Glu Trp
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Gly Ile Glu Trp
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Glu Leu Glu Trp
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Gly Pro Glu Trp
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Glu Trp Leu Pro
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Gly Pro Glu Arg
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Gly Leu Glu Arg
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Gly Gly Gly Cys
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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 Thr Phe Ser Ser Tyr
20 25 30

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Tyr Ile Ser Ser Ser Ser Ser Thr Ile Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
            100                 105


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<213>  Artificial

<220>
<223>  immunoglobulin construct

<400>  473

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 Thr Phe Ser Ser Tyr
            20                  25                  30

Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Val Trp Val
        35                  40                  45

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

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

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

Ala Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
            100                 105


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<220>
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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 Thr Phe Ser Ser Tyr
            20                  25                  30

Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
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50 55 60

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

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

Ala Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
100 105

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<400> 475

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 Thr Phe Ser Asp His
20 25 30

Tyr Met Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Gly Arg Thr Arg Asn Lys Ala Asn Ser Tyr Thr Thr Glu Tyr Ala Ala
50 55 60

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

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

Tyr Cys Ala Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
100 105 110

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<400> 476

Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala
1 5 10 15

Ala