

# SEQUENCE LISTING

<110> Ablynx N.V.

<120> RECEPTOR FOR INTERLEUKIN-6 (IL-6) FROM MACACA FASCICULARIS

<130> P07-015 PCT-1

<160> 34

<170> PatentIn version 3.4

<210> 1

<211> 1017

<212> DNA

<213> Macaca fascicularis

<400> 1

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<212> PRT

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Gly Ser His Leu Ser Arg Trp Ala Gly Val Gly Arg Arg Leu Leu Leu  
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Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys Tyr Arg Ala  
65 70 75 80

Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val Pro Pro Glu  
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Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser Asn Val Val  
100 105 110

Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Pro Thr Thr Lys Ala Val  
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Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp Phe Gln Glu  
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Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys Gln Leu Ala  
145 150 155 160

Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met Cys Val Ala  
165 170 175

Ser Ser Val Gly Ser Lys Leu Ser Lys Thr Gln Thr Phe Gln Gly Cys  
180 185 190

Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val Thr Ala Val  
195 200 205

Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp Pro His Ser  
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Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg Tyr Arg Ala  
225 230 235 240

Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp Leu Gln His  
245 250 255

His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His Val Val Gln  
260 265 270

Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser Glu Trp Ser  
275 280 285

Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser Pro Pro Ala  
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Glu Asn Glu Val Ser Thr Pro Thr Gln Ala Pro Thr Thr Asn Lys Asp  
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Val Gln Asp

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Pro Glu Asp Asn Ala Thr Val His Trp Val Leu Arg Lys Pro Ala Glu  
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Gly Ser His Leu Ser Arg Trp Ala Gly Val Gly Arg Arg Leu Leu Leu  
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 Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys Tyr Arg Ala  
 65 70 75 80  
 Gly Arg Pro Ala Ala Thr Val His Leu Leu Val Asp Val Pro Pro Glu  
 85 90 95  
 Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser Asn Val Val  
 100 105 110  
 Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Pro Thr Thr Lys Ala Val  
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 Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp Phe Gln Glu  
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 Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys Gln Leu Ala  
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 Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met Cys Val Ala  
 165 170 175  
 Ser Ser Val Gly Ser Lys Leu Ser Lys Thr Gln Thr Phe Gln Gly Cys  
 180 185 190  
 Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val Thr Ala Val  
 195 200 205  
 Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp Pro His Ser  
 210 215 220  
 Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg Tyr Arg Ala  
 225 230 235 240  
 Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp Leu Gln His  
 245 250 255  
 His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His Val Val Gln  
 260 265 270  
 Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser Glu Trp Ser  
 275 280 285  
 Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser Pro Pro Ala  
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Asp Asp Asn Ile Leu Ser Gly Asp Ser Ala Asn Ala Thr Ser Leu Pro  
 325 330 335

Val Gln Asp

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 35 40 45

Gly Ser His Pro Ser Arg Trp Ala Gly Met Gly Arg Arg Leu Leu Leu  
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55

60

Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys Tyr Arg Ala  
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Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val Pro Pro Glu  
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Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser Asn Val Val  
100 105 110

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

Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp Phe Gln Glu  
130 135 140

Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys Gln Leu Ala  
145 150 155 160

Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met Cys Val Ala  
165 170 175

Ser Ser Val Gly Ser Lys Phe Ser Lys Thr Gln Thr Phe Gln Gly Cys  
180 185 190

Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val Thr Ala Val  
195 200 205

Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp Pro His Ser  
210 215 220

Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg Tyr Arg Ala  
225 230 235 240

Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp Leu Gln His  
245 250 255

His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His Val Val Gln  
260 265 270

Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser Glu Trp Ser  
275 280 285

Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser Pro Pro Ala  
290 295 300

Glu Asn Glu Val Ser Thr Pro Met Gln Ala Leu Thr Thr Asn Lys Asp  
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Asp Asp Asn Ile Leu Phe Arg Asp Ser Ala Asn Ala Thr Ser Leu Pro  
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Val Gln Asp

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35 40 45

Gly Ser Tyr Leu Ser Arg Trp Ala Gly Val Gly Arg Arg Leu Leu Leu  
50 55 60

Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys Tyr Arg Ala  
65 70 75 80

Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val Pro Pro Glu  
85 90 95

Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser Asn Val Val  
100 105 110

Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Pro Thr Thr Lys Ala Val  
115 120 125

Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp Phe Gln Glu  
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Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys Gln Leu Ala  
145 150 155 160

Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met Cys Val Ala  
165 170 175

Ser Ser Val Gly Ser Lys Phe Ser Lys Thr Gln Thr Phe Gln Gly Cys  
180 185 190

Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val Thr Ala Val  
195 200 205

Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp Pro His Ser  
210 215 220

Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg Tyr Arg Ala  
225 230 235 240

Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp Leu Gln His  
245 250 255

His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His Val Val Gln  
260 265 270

Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser Glu Trp Ser  
275 280 285

Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser Pro Pro Ala  
290 295 300

Glu Asn Glu Val Ser Thr Pro Thr Gln Ala Pro Thr Thr Asn Lys Asp  
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Asp Asp Asn Ile Leu Ser Arg Asp Ser Ala Asn Ala Thr Ser Leu Pro  
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Val Gln Asp

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<211> 468

<212> PRT

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Gly Val Leu Thr Ser Leu Pro Gly Asp Asn Val Thr Leu Thr Cys Pro  
35 40 45

Trp Gly Glu Leu Glu Asp Asn Ala Thr Val Asp Trp Val Leu Glu Lys  
50 55 60

Pro Ala Glu Gly Ala His Pro Gly Arg Trp Ala Gly Met Gly Arg Arg  
65 70 75 80

Leu Leu Leu Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys  
85 90 95

Phe Gln Ala Gly His Pro Ala Gly Thr Val His Leu Leu Val Asp Val  
100 105 110

Pro Pro Glu Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser  
115 120 125



Asn Val Val Cys Glu Trp Gly Pro Gln Ser Thr Pro Ser Pro Thr Thr  
 130 135 140

Lys Ala Val Leu Leu Val Arg Lys Phe Asp Asn Ser Pro Ala Lys Asp  
 145 150 155 160

Phe Gln Glu Pro Cys Gln Tyr Ser Gln Glu Ser Arg Lys Phe Ser Cys  
 165 170 175

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

Cys Val Ala Ser Ser Val Gly Ser Lys Phe Ser Lys Ala Gln Thr Phe  
 195 200 205

Gln Gly Cys Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val  
 210 215 220

Thr Ala Val Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp  
 225 230 235 240

Pro Pro Ser Trp Asn Ser Thr Phe Tyr Arg Leu Gln Phe Gln Leu Arg  
 245 250 255

Tyr Arg Ala Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Arg Asp  
 260 265 270

Leu Gln His His Cys Val Ile Tyr Asp Ala Trp Ser Gly Leu Arg His  
 275 280 285

Val Val Gln Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Lys Trp Ser  
 290 295 300

Glu Trp Ser Pro Glu Val Met Gly Thr Pro Trp Thr Glu Ser Arg Ser  
 305 310 315 320

Pro Pro Ala Glu Lys Glu Val Ser Thr Pro Thr Gln Ala Pro Asn Ala  
 325 330 335

Asn Lys Asp Asp Asn Asn Thr Leu Pro Arg Asp Ser Ala Asn Val Thr  
 340 345 350

Ser Leu Pro Val Gln Asp Ser Ser Ser Val Pro Leu Pro Thr Phe Leu  
 355 360 365

Val Ala Gly Gly Ser Leu Ala Phe Gly Thr Leu Leu Cys Ile Ala Val  
 370 375 380

Gly Leu Arg Leu Lys Lys Thr Arg Lys Arg Arg Ala Gly Lys Glu Asp  
 385 390 395 400

Lys Thr Ser Thr His Pro Pro Tyr Ser Leu Gly Gln Leu Val Pro Glu  
405 410 415

Arg Pro Arg Ser Thr Pro Val Leu Val Pro Leu Ile Ser Pro Pro Val  
420 425 430

Ser Pro Ser Ser Leu Gly Ser Asp Asn Thr Ser Ser His Ser Arg Pro  
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Asp Ala Arg Asp Ser Arg Ser Pro Tyr Asp Ile Asn Asn Arg Asp Tyr  
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Phe Phe Pro Arg  
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35 40 45

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

Ser Gln Ser Arg Glu Trp Thr Thr Thr Gly Asn Thr Leu Val Leu Arg  
65 70 75 80

Ala Val Gln Val Asn Asp Thr Gly His Tyr Leu Cys Phe Leu Asp Asp  
85 90 95

His Leu Val Gly Thr Val Pro Leu Leu Val Asp Val Pro Pro Glu Glu  
100 105 110

Pro Lys Leu Ser Cys Phe Arg Lys Asn Pro Leu Val Asn Ala Phe Cys  
115 120 125

Glu Trp His Pro Ser Ser Thr Pro Ser Pro Thr Thr Lys Ala Val Met  
 130 135 140  
 Phe Ala Lys Lys Ile Asn Thr Thr Asn Gly Lys Ser Asp Phe Gln Val  
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 Pro Cys Gln Tyr Ser Gln Gln Leu Lys Ser Phe Ser Cys Glu Val Glu  
 165 170 175  
 Ile Leu Glu Gly Asp Lys Val Tyr His Ile Val Ser Leu Cys Val Ala  
 180 185 190  
 Asn Ser Val Gly Ser Arg Ser Ser His Asn Val Val Phe Gln Ser Leu  
 195 200 205  
 Lys Met Val Gln Pro Asp Pro Pro Ala Asn Leu Val Val Ser Ala Ile  
 210 215 220  
 Pro Gly Xaa Pro Arg Trp Leu Lys Val Ser Trp Gln Asp Pro Glu Ser  
 225 230 235 240  
 Trp Asp Pro Ser Tyr Tyr Leu Leu Gln Phe Glu Leu Arg Tyr Arg Pro  
 245 250 255  
 Val Trp Ser Lys Xaa Phe Thr Val Trp Pro Leu Gln Val Ala Gln His  
 260 265 270  
 Gln Cys Val Ile His Asp Ala Leu Arg Gly Val Lys His Val Val Gln  
 275 280 285  
 Val Arg Gly Lys Glu Glu Phe Asp Ile Gly Gln Trp Ser Lys Trp Ser  
 290 295 300  
 Pro Glu Val Thr Gly Thr Pro Trp Leu Ala Glu Pro Arg Thr Thr Pro  
 305 310 315 320  
 Ala Gly Ile Pro Gly Asn Pro Thr Gln Val Ser Val Glu Asp Tyr Asp  
 325 330 335  
 Asn His Glu Asp Gln Tyr Gly Ser Ser Thr Glu Ala Thr Ser Val Leu  
 340 345 350  
 Ala Pro Val Gln Gly Ser Ser Pro Ile Pro Leu Pro Thr Phe Leu Val  
 355 360 365  
 Ala Gly Gly Ser Leu Ala Phe Gly Leu Leu Leu Cys Val Phe Ile Ile  
 370 375 380  
 Leu Arg Leu Lys Lys Lys Trp Lys Ser Gln Ala Glu Lys Glu Ser Lys  
 385 390 395 400

Thr Thr Ser Pro Pro Tyr Pro Leu Gly Pro Leu Lys Pro Thr Phe  
405 410 415

Leu Leu Val Pro Leu Leu Thr Pro Ser Gly Ser His Asn Ser Ser Gly  
420 425 430

Thr Asp Asn Thr Gly Ser His Ser Cys Leu Gly Val Arg Asp Pro Gln  
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Cys Pro Asn Asp Asn Ser Asn Arg Asp Tyr Leu Phe Pro Arg  
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Asp Val Leu Thr Ser Leu Pro Gly Ala Ser Val Thr Leu Thr Cys Pro  
35 40 45

Gly Gly Glu Pro Gly Asp Asn Ala Thr Ile His Trp Val Leu Arg Asn  
50 55 60

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

Leu Leu Leu Lys Ser Val Gln Leu Ser Asp Ser Gly Asn Tyr Ser Cys  
85 90 95

Tyr Gln Asp Gly Val Pro Ala Gly Ser Val Arg Leu Leu Val Asp Ala  
100 105 110

Pro Pro Glu Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser  
115 120 125

Asn Val Gly Cys Glu Trp Arg Pro Arg Ser Pro Pro Ser Pro Thr Thr  
130 135 140

Lys Ala Val Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Val Glu Asp  
145 150 155 160

Phe Gln Glu Pro Cys Gln Tyr Ser Leu Glu Ala Gln Arg Phe Phe Cys  
165 170 175

Gln Leu Ala Val Pro Glu Gly Asp Asn Ser Phe His Ile Val Thr Leu  
Seite 12

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Pro	Pro	Ser	Trp	Asn	Ser	Tyr	Phe	Tyr	Arg	Leu	Gln	Phe	Glu	Leu	Arg
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Tyr	Arg	Ala	Glu	Arg	Ser	Lys	Thr	Phe	Thr	Thr	Trp	Met	Val	Lys	Glu
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Leu	Gln	His	His	Cys	Ile	Ile	His	Asp	Ala	Trp	Ser	Gly	Met	Arg	His
		275					280					285			
Val	Val	Gln	Leu	Arg	Ala	Gln	Glu	Glu	Phe	Gly	His	Gly	Leu	Trp	Ser
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Glu	Trp	Ser	Gln	Glu	Val	Thr	Gly	Ile	Pro	Trp	Thr	Glu	Ser	Arg	Ser
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Ser	Pro	Ala	Glu	Thr	Glu	Leu	Pro	Leu	Ser	Thr	Gln	Ala	Pro	Thr	Thr
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Ser	Leu	Pro	Val	Gln	Asp	Ser	Ala	Ser	Val	Pro	Leu	Pro	Thr	Phe	Leu
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Val	Ala	Gly	Gly	Ser	Leu	Ala	Phe	Gly	Thr	Leu	Leu	Cys	Ile	Gly	Ile
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Lys	Thr	Asn	Met	His	Pro	Pro	Tyr	Ser	Leu	Gly	Gln	Leu	Val	Pro	Glu
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Ser	Pro	Asn	Ser	Leu	Gly	Asp	Asn	Thr	Ser	Arg	Asn	Ser	Arg	Pro	Glu
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Gly Lys Glu Ala Ala Gly Asn Val Thr Ile His Trp Val Tyr Ser Gly  
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Ser Gln Asn Arg Glu Trp Thr Thr Thr Gly Asn Thr Leu Val Leu Arg  
65 70 75 80

Asp Val Gln Leu Ser Asp Thr Gly Asp Tyr Leu Cys Ser Leu Asn Asp  
85 90 95

His Leu Val Gly Thr Val Pro Leu Leu Val Asp Val Pro Pro Glu Glu  
100 105 110

Pro Lys Leu Ser Cys Phe Arg Lys Asn Pro Leu Val Asn Ala Ile Cys  
115 120 125

Glu Trp Arg Pro Ser Ser Thr Pro Ser Pro Thr Thr Lys Ala Val Leu  
130 135 140

Phe Ala Lys Lys Ile Asn Thr Thr Asn Gly Lys Ser Asp Phe Gln Val  
145 150 155 160

Pro Cys Gln Tyr Ser Gln Gln Leu Lys Ser Phe Ser Cys Gln Val Glu  
165 170 175

Ile Leu Glu Gly Asp Lys Val Tyr His Ile Val Ser Leu Cys Val Ala  
180 185 190

Asn Ser Val Gly Ser Lys Ser Ser His Asn Glu Ala Phe His Ser Leu  
195 200 205

Lys Met Val Gln Pro Asp Pro Pro Ala Asn Leu Val Val Ser Ala Ile  
210 215 220

Pro Gly Arg Pro Arg Trp Leu Lys Val Ser Trp Gln His Pro Glu Thr  
 225 230 235 240  
 Trp Asp Pro Ser Tyr Tyr Leu Leu Gln Phe Gln Leu Arg Tyr Arg Pro  
 245 250 255  
 Val Trp Ser Lys Glu Phe Thr Val Leu Leu Leu Pro Val Ala Gln Tyr  
 260 265 270  
 Gln Cys Val Ile His Asp Ala Leu Arg Gly Val Lys His Val Val Gln  
 275 280 285  
 Val Arg Gly Lys Glu Glu Leu Asp Leu Gly Gln Trp Ser Glu Trp Ser  
 290 295 300  
 Pro Glu Val Thr Gly Thr Pro Trp Ile Ala Glu Pro Arg Thr Thr Pro  
 305 310 315 320  
 Ala Gly Ile Leu Trp Asn Pro Thr Gln Val Ser Val Glu Asp Ser Ala  
 325 330 335  
 Asn His Glu Asp Gln Tyr Glu Ser Ser Thr Glu Ala Thr Ser Val Leu  
 340 345 350  
 Ala Pro Val Gln Glu Ser Ser Ser Met Ser Leu Pro Thr Phe Leu Val  
 355 360 365  
 Ala Gly Gly Ser Leu Ala Phe Gly Leu Leu Leu Cys Val Phe Ile Ile  
 370 375 380  
 Leu Arg Leu Lys Gln Lys Trp Lys Ser Glu Ala Glu Lys Glu Ser Lys  
 385 390 395 400  
 Thr Thr Ser Pro Pro Pro Pro Pro Tyr Ser Leu Gly Pro Leu Lys Pro  
 405 410 415  
 Thr Phe Leu Leu Val Pro Leu Leu Thr Pro His Ser Ser Gly Ser Asp  
 420 425 430  
 Asn Thr Val Asn His Ser Cys Leu Gly Val Arg Asp Ala Gln Ser Pro  
 435 440 445  
 Tyr Asp Asn Ser Asn Arg Asp Tyr Leu Phe Pro Arg  
 450 455 460

<210> 12  
 <211> 118  
 <212> PRT  
 <213> Artificial

<220>  
 <223> Nanobody sequence

<400> 12

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  
 Asp Met Gly Trp Tyr Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val  
 35 40 45  
 Ala Val Ile Ser Arg Ser Gly Ser Ser Thr Tyr Tyr Ala Asp Ser 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 Ser Leu Lys Pro Glu Asp Thr Ala Ile Tyr Tyr Cys  
 85 90 95  
 Lys Ala Glu Val Val Ala Gly Asp Tyr Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110  
 Gln Val Thr Val Ser Ser  
 115

<210> 13  
 <211> 121  
 <212> PRT  
 <213> Artificial

<220>  
 <223> Nanobody sequence

<400> 13

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 Ser Ile Phe Lys Val Asn  
 20 25 30  
 Ala Met Gly Trp Tyr Arg Gln Ala Pro Gly Lys Gln Arg Glu Leu Val  
 35 40 45  
 Ala Gly Ile Ile Ser Gly Gly Ser Thr Asn Tyr Ala Asp Ser Val Lys  
 50 55 60  
 Gly Arg Leu 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 Tyr Cys Ser  
 85 90 95  
 Phe Val Thr Thr Asn Ser Asp Tyr Asp Leu Gly Arg Asp Tyr Trp Gly  
 100 105 110



Gln Gly Thr Gln Val Thr Val Ser Ser  
115 120

<210> 14  
<211> 127  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 14

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 Phe Thr Phe Asp Asp Tyr  
20 25 30

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

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

Lys Gly Arg Phe Thr Ile Ser Ser Asp Asn Ala Lys Asn Thr Val 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 Glu Pro Pro Asp Ser Ser Trp Tyr Leu Asp Gly Ser Pro Glu  
100 105 110

Phe Phe Lys Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser  
115 120 125

<210> 15  
<211> 126  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 15

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 Gly Ser Tyr  
20 25 30

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

Ser Ala Ile Asn Ser Gly Gly Gly Ser Thr Tyr 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 Val Tyr Tyr Cys  
85 90 95

Ala Thr Asp Trp Arg Tyr Ser Asp Tyr Asp Leu Pro Leu Pro Pro Pro  
100 105 110

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

<210> 16  
<211> 119  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 16

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 Asn Ile Phe Asp Asp Asn  
20 25 30

Thr Met Gly Trp Thr Trp Asn Arg Gln Pro Pro Gly Lys Gln Arg Glu  
35 40 45

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

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

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

Cys Asn Leu Phe Ser Leu Arg Leu Gly Arg Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Gln Val Thr Val Ser Ser  
115

<210> 17  
<211> 130  
<212> PRT  
<213> Artificial

<220>

<223> Nanobody sequence

<400> 17

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 Leu Asp Tyr Gly  
20 25 30

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Gly Lys Asn Thr Val 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 Asp Lys Met Trp Ser Pro Cys Leu Val Ala Ala Asn Glu Glu  
100 105 110

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

Ser Ser  
130

<210> 18

<211> 126

<212> PRT

<213> Artificial

<220>

<223> Nanobody sequence

<400> 18

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 Gly Phe Ser Leu Asp Tyr Tyr  
20 25 30

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

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

Ala Ala Asp Leu Leu Arg Thr Pro Glu Phe Cys Val Asp Ser Ala Pro  
100 105 110

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

<210> 19  
<211> 120  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 19

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

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

Ala Val Ile His Trp Ser Ser Gly Ser Thr Tyr Tyr Ala Asp Pro 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 Ser Leu Lys Pro Glu Asp Thr Ala Ile Tyr Tyr Cys  
85 90 95

Asn Ala Phe Leu Pro Gly Pro Glu Gly Phe His Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Gln Val Thr Val Ser Ser  
115 120

<210> 20  
<211> 127  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 20

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 Phe Thr Phe Asp Asp Tyr  
20 25 30

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

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

Lys Gly Arg Phe Thr Ile Ser Ser Asp Asn Ala Lys Asn Thr Val 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 Glu Arg Asp Val Pro Ala Arg Ser Leu Cys Gly Ser Tyr Tyr  
100 105 110

Trp Tyr Asp Tyr Arg Gly Gln Gly Thr Gln Val Thr Val Ser Ser  
115 120 125

<210> 21  
<211> 118  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 21

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

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

Ala Ile Ile Thr Trp Asn Ser Ser Thr Tyr 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 Ile Tyr Tyr Cys Asn  
85 90 95

Ala Gln Tyr Gly Leu Gly Tyr Ala Glu Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Gln Val Thr Val Ser Ser  
115

<210> 22  
<211> 127  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 22

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 Asp Asp Tyr  
20 25 30

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

Ser Ala Ile Ser Trp Asn Gly Asn Asn Thr Tyr Tyr Thr Glu Ser Met  
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 Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

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

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

<210> 23  
<211> 135  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 23

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 Ser Leu Asp Tyr Tyr  
20 25 30

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

Ser Cys Met Asp Ser Ser Ser Gly Thr Thr Ser Thr Tyr Tyr Ser Asp  
50 55 60

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

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

Tyr Cys Ala Ala Asp Gly His Leu Asn Trp Gly Gln Arg Tyr Val Pro  
100 105 110

Cys Ser Gln Ile Ser Trp Arg Gly Trp Asn Asp Tyr Trp Gly Gln Gly  
115 120 125

Thr Gln Val Thr Val Ser Ser  
130 135

<210> 24  
<211> 121  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 24

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 Ile Phe Lys Val Asn  
20 25 30

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

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

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

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

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

Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 25  
<211> 127  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 25

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 Asp Asp Tyr  
20 25 30

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

Ser Ala Ile Ser Trp Asn Gly Asn Asn Thr Tyr Tyr Thr Glu Ser Met  
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

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

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

<210> 26

<211> 115

<212> PRT

<213> Artificial

<220>

<223> Nanobody sequence

<400> 26

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> 27  
<211> 449  
<212> PRT  
<213> Artificial

<220>  
<223> Reference fab heavy chain sequence

<400> 27

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Tyr Ser Ile Thr Ser Asp  
20 25 30

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

Ile Gly Tyr Ile Ser Tyr Ser Gly Ile Thr Thr Tyr Asn Pro Ser Leu  
50 55 60

Lys Ser Arg Val Thr Met Leu Arg Asp Thr Ser Lys Asn Gln Phe Ser  
65 70 75 80

Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Lys

<210> 28  
<211> 214  
<212> PRT  
<213> Artificial

<220>

<223> Reference Fab light chain sequence

<400> 28

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
1 5 10 15

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

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

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys  
210

<210> 29

<211> 222

<212> PRT

<213> Artificial

<220>

<223> Reference IgG heavy chain sequence

<400> 29

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Tyr Ser Ile Thr Ser Asp  
20 25 30

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

Ile Gly Tyr Ile Ser Tyr Ser Gly Ile Thr Thr Tyr Asn Pro Ser Leu  
50 55 60

Lys Ser Arg Val Thr Met Leu Arg Asp Thr Ser Lys Asn Gln Phe Ser  
65 70 75 80

Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

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

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

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

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

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

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

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

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

<210> 30

<211> 214

<212> PRT

<213> Artificial

<220>

<223> Reference IgG light chain sequence

<400> 30

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
1 5 10 15

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

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

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys  
210

<210> 31  
<211> 127  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 31

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

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

Ser Gly Ile Ser Ser Ser Asp Gly Asn Thr Tyr 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

Ala Ala Glu Pro Pro Asp Ser Ser Trp Tyr Leu Asp Gly Ser Pro Glu  
100 105 110

Phe Phe Lys Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 32  
<211> 251  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 32

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

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

Ser Gly Ile Ser Ser Ser Asp Gly Asn Thr Tyr 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

Ala Ala Glu Pro Pro Asp Ser Ser Trp Tyr Leu Asp Gly Ser Pro Glu  
100 105 110

Phe Phe Lys Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
115 120 125

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

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

Ser Gly Phe Thr Phe Ser Ser Phe Gly Met Ser Trp Val Arg Gln Ala  
165 170 175

Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Gly Ser Gly Ser  
180 185 190

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

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

Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile Gly Gly Ser Leu Ser Arg  
225 230 235 240

Ser Ser Gln Gly Thr Leu Val Thr Val Ser Ser  
245 250

<210> 33  
<211> 387  
<212> PRT  
<213> Artificial

<220>  
<223> Nanobody sequence

<400> 33

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

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

Ser Gly Ile Ser Ser Ser Asp Gly Asn Thr Tyr 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

Ala Ala Glu Pro Pro Asp Ser Ser Trp Tyr Leu Asp Gly Ser Pro Glu  
Seite 31

100					105					110					
Phe	Phe	Lys <sub>115</sub>	Tyr	Trp	Gly	Gln	Gly <sub>120</sub>	Thr	Leu	Val	Thr	Val <sub>125</sub>	Ser	Ser	Gly
Gly	Gly <sub>130</sub>	Gly	Ser	Gly	Gly	Gly <sub>135</sub>	Ser	Glu	Val	Gln	Leu <sub>140</sub>	Val	Glu	Ser	Gly
Gly	Gly	Leu	Val	Gln	Pro <sub>150</sub>	Gly	Asn	Ser	Leu	Arg <sub>155</sub>	Leu	Ser	Cys	Ala	Ala <sub>160</sub>
Ser	Gly	Phe	Thr	Phe <sub>165</sub>	Ser	Ser	Phe	Gly	Met <sub>170</sub>	Ser	Trp	Val	Arg	Gln <sub>175</sub>	Ala
Pro	Gly	Lys	Gly <sub>180</sub>	Leu	Glu	Trp	Val	Ser <sub>185</sub>	Ser	Ile	Ser	Gly	Ser <sub>190</sub>	Gly	Ser
Asp	Thr	Leu <sub>195</sub>	Tyr	Ala	Asp	Ser	Val <sub>200</sub>	Lys	Gly	Arg	Phe	Thr <sub>205</sub>	Ile	Ser	Arg
Asp	Asn <sub>210</sub>	Ala	Lys	Thr	Thr	Leu <sub>215</sub>	Tyr	Leu	Gln	Met	Asn <sub>220</sub>	Ser	Leu	Arg	Pro
Glu	Asp	Thr	Ala	Val	Tyr <sub>230</sub>	Tyr	Cys	Thr	Ile	Gly <sub>235</sub>	Gly	Ser	Leu	Ser	Arg <sub>240</sub>
Ser	Ser	Gln	Gly	Thr <sub>245</sub>	Leu	Val	Thr	Val	Ser <sub>250</sub>	Ser	Gly	Gly	Gly	Gly <sub>255</sub>	Ser
Gly	Gly	Gly	Ser <sub>260</sub>	Glu	Val	Gln	Leu	Val <sub>265</sub>	Glu	Ser	Gly	Gly	Gly <sub>270</sub>	Leu	Val
Gln	Pro	Gly <sub>275</sub>	Gly	Ser	Leu	Arg	Leu <sub>280</sub>	Ser	Cys	Ala	Ala	Ser <sub>285</sub>	Gly	Phe	Thr
Phe	Ser <sub>290</sub>	Asp	Tyr	Asp	Ile	Gly <sub>295</sub>	Trp	Phe	Arg	Gln	Ala <sub>300</sub>	Pro	Gly	Lys	Gly
Arg	Glu	Gly	Val	Ser	Gly <sub>310</sub>	Ile	Ser	Ser	Ser	Asp <sub>315</sub>	Gly	Asn	Thr	Tyr	Tyr <sub>320</sub>
Ala	Asp	Ser	Val	Lys <sub>325</sub>	Gly	Arg	Phe	Thr	Ile <sub>330</sub>	Ser	Arg	Asp	Asn	Ala <sub>335</sub>	Lys
Asn	Thr	Leu	Tyr <sub>340</sub>	Leu	Gln	Met	Asn	Ser <sub>345</sub>	Leu	Arg	Pro	Glu	Asp <sub>350</sub>	Thr	Ala
Val	Tyr	Tyr <sub>355</sub>	Cys	Ala	Ala	Glu	Pro <sub>360</sub>	Pro	Asp	Ser	Ser	Trp <sub>365</sub>	Tyr	Leu	Asp
Gly	Ser	Pro	Glu	Phe	Phe	Lys <sub>375</sub>	Tyr	Trp	Gly	Gln	Gly <sub>380</sub>	Thr	Leu	Val	Thr



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<220>  
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<400> 34

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20 25 30

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

Ser Gly Ile Ser Ser Ser Asp Gly Asn Thr Tyr 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

Ala Ala Glu Pro Pro Asp Ser Ser Trp Tyr Leu Asp Gly Ser Pro Glu  
100 105 110

Phe Phe Lys Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125