

PhoenixTemp22539.tmp.txt  
SEQUENCE LISTING

<110> Apogenix GmbH  
<120> Antibodies directed against IL-4 receptor for the treatment of cancer  
<130> IL-4RmAb\_PCT  
<160> 17  
<170> PatentIn version 3.3  
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<212> PRT  
<213> Homo sapiens

<220>  
<221> PEPTIDE  
<222> (1)..(11)  
<223> heavy Chain Complementary Determining Region  
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Ser Gly Phe Thr Phe Asn Thr Asn Ala Met Asn  
1 5 10

<210> 2  
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<213> Homo sapiens

<220>  
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<222> (1)..(19)  
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<400> 2

Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
1 5 10 15

Val Lys Asp

<210> 3  
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<400> 3

Asp Arg Gly Trp Gly Ala Met Asp Tyr  
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Ser Ala Ser Gln Asp Ile Asn Asn Tyr Leu Asn  
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Tyr Thr Ser Ser Leu His Ser  
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<210> 6  
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 <223> light Chaim Complement Determining Region  
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Gln Gln Phe Ser Asn Leu Pro Trp Thr  
 1 5

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 <211> 214  
 <212> PRT  
 <213> Mus musculus

<220>  
 <221> PEPTIDE  
 <222> (1)..(214)

&lt;400&gt; 7

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

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

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

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

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Pro  
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Ser Asn Leu Pro Trp  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala  
 100 105 110

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile  
 130 135 140

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

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser  
 165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr  
 180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser  
 195 200 205

Phe Asn Arg Asn Glu Cys  
 210

&lt;210&gt; 8

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

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<220>

<221> PEPTIDE

<222> (1)..(108)

<400> 8

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

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

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
35 40 45

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

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Pro  
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Ser Asn Leu Pro Trp  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
100 105

<210> 9

<211> 119

<212> PRT

<213> Mus musculus

<220>

<221> PEPTIDE

<222> (1)..(119)

<400> 9

Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Gln Pro Lys Gly  
1 5 10 15

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

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

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

Ser Val Lys Asp Arg Phe Thr Leu Ser Arg Asp Asp Ser Gln Ser Met



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<220>
<221>  PEPTIDE
<222>  (1)..(119)

<400>  11

Gly Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Gln Pro Lys Gly
1          5          10          15

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

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

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

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

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

Tyr Cys Val Arg Asp Arg Gly Trp Gly Ala Met Asp Tyr Trp Gly Gln
          100          105          110

Gly Thr Thr Val Thr Val Ser
          115

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<210>  12
<211>  825
<212>  PRT
<213>  Homo sapiens

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<220>
<221>  PEPTIDE
<222>  (1)..(825)

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<300>
<308>  NP_000409.1
<309>  2008-03-16
<313>  (1)..(825)

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<400>  12

Met Gly Trp Leu Cys Ser Gly Leu Leu Phe Pro Val Ser Cys Leu Val
1          5          10          15

Leu Leu Gln Val Ala Ser Ser Gly Asn Met Lys Val Leu Gln Glu Pro
          20          25          30

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## PhoenixTemp22539.tmp.txt

Thr Cys Val Ser Asp Tyr Met Ser Ile Ser Thr Cys Glu Trp Lys Met  
 35 40 45  
 Asn Gly Pro Thr Asn Cys Ser Thr Glu Leu Arg Leu Leu Tyr Gln Leu  
 50 55 60  
 Val Phe Leu Leu Ser Glu Ala His Thr Cys Ile Pro Glu Asn Asn Gly  
 65 70 75 80  
 Gly Ala Gly Cys Val Cys His Leu Leu Met Asp Asp Val Val Ser Ala  
 85 90 95  
 Asp Asn Tyr Thr Leu Asp Leu Trp Ala Gly Gln Gln Leu Leu Trp Lys  
 100 105 110  
 Gly Ser Phe Lys Pro Ser Glu His Val Lys Pro Arg Ala Pro Gly Asn  
 115 120 125  
 Leu Thr Val His Thr Asn Val Ser Asp Thr Leu Leu Leu Thr Trp Ser  
 130 135 140  
 Asn Pro Tyr Pro Pro Asp Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala  
 145 150 155 160  
 Val Asn Ile Trp Ser Glu Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn  
 165 170 175  
 Val Thr Tyr Leu Glu Pro Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys  
 180 185 190  
 Ser Gly Ile Ser Tyr Arg Ala Arg Val Arg Ala Trp Ala Gln Cys Tyr  
 195 200 205  
 Asn Thr Thr Trp Ser Glu Trp Ser Pro Ser Thr Lys Trp His Asn Ser  
 210 215 220  
 Tyr Arg Glu Pro Phe Glu Gln His Leu Leu Leu Gly Val Ser Val Ser  
 225 230 235 240  
 Cys Ile Val Ile Leu Ala Val Cys Leu Leu Cys Tyr Val Ser Ile Thr  
 245 250 255  
 Lys Ile Lys Lys Glu Trp Trp Asp Gln Ile Pro Asn Pro Ala Arg Ser  
 260 265 270  
 Arg Leu Val Ala Ile Ile Ile Gln Asp Ala Gln Gly Ser Gln Trp Glu  
 275 280 285

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Lys Arg Ser Arg Gly Gln Glu Pro Ala Lys Cys Pro His Trp Lys Asn  
 290 295 300  
  
 Cys Leu Thr Lys Leu Leu Pro Cys Phe Leu Glu His Asn Met Lys Arg  
 305 310 315 320  
  
 Asp Glu Asp Pro His Lys Ala Ala Lys Glu Met Pro Phe Gln Gly Ser  
 325 330 335  
  
 Gly Lys Ser Ala Trp Cys Pro Val Glu Ile Ser Lys Thr Val Leu Trp  
 340 345 350  
  
 Pro Glu Ser Ile Ser Val Val Arg Cys Val Glu Leu Phe Glu Ala Pro  
 355 360 365  
  
 Val Glu Cys Glu Glu Glu Glu Glu Val Glu Glu Glu Lys Gly Ser Phe  
 370 375 380  
  
 Cys Ala Ser Pro Glu Ser Ser Arg Asp Asp Phe Gln Glu Gly Arg Glu  
 385 390 395 400  
  
 Gly Ile Val Ala Arg Leu Thr Glu Ser Leu Phe Leu Asp Leu Leu Gly  
 405 410 415  
  
 Glu Glu Asn Gly Gly Phe Cys Gln Gln Asp Met Gly Glu Ser Cys Leu  
 420 425 430  
  
 Leu Pro Pro Ser Gly Ser Thr Ser Ala His Met Pro Trp Asp Glu Phe  
 435 440 445  
  
 Pro Ser Ala Gly Pro Lys Glu Ala Pro Pro Trp Gly Lys Glu Gln Pro  
 450 455 460  
  
 Leu His Leu Glu Pro Ser Pro Pro Ala Ser Pro Thr Gln Ser Pro Asp  
 465 470 475 480  
  
 Asn Leu Thr Cys Thr Glu Thr Pro Leu Val Ile Ala Gly Asn Pro Ala  
 485 490 495  
  
 Tyr Arg Ser Phe Ser Asn Ser Leu Ser Gln Ser Pro Cys Pro Arg Glu  
 500 505 510  
  
 Leu Gly Pro Asp Pro Leu Leu Ala Arg His Leu Glu Glu Val Glu Pro  
 515 520 525  
  
 Glu Met Pro Cys Val Pro Gln Leu Ser Glu Pro Thr Thr Val Pro Gln  
 530 535 540

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Pro Glu Pro Glu Thr Trp Glu Gln Ile Leu Arg Arg Asn Val Leu Gln  
 545 550 555 560

His Gly Ala Ala Ala Ala Pro Val Ser Ala Pro Thr Ser Gly Tyr Gln  
 565 570 575

Glu Phe Val His Ala Val Glu Gln Gly Gly Thr Gln Ala Ser Ala Val  
 580 585 590

Val Gly Leu Gly Pro Pro Gly Glu Ala Gly Tyr Lys Ala Phe Ser Ser  
 595 600 605

Leu Leu Ala Ser Ser Ala Val Ser Pro Glu Lys Cys Gly Phe Gly Ala  
 610 615 620

Ser Ser Gly Glu Glu Gly Tyr Lys Pro Phe Gln Asp Leu Ile Pro Gly  
 625 630 635 640

Cys Pro Gly Asp Pro Ala Pro Val Pro Val Pro Leu Phe Thr Phe Gly  
 645 650 655

Leu Asp Arg Glu Pro Pro Arg Ser Pro Gln Ser Ser His Leu Pro Ser  
 660 665 670

Ser Ser Pro Glu His Leu Gly Leu Glu Pro Gly Glu Lys Val Glu Asp  
 675 680 685

Met Pro Lys Pro Pro Leu Pro Gln Glu Gln Ala Thr Asp Pro Leu Val  
 690 695 700

Asp Ser Leu Gly Ser Gly Ile Val Tyr Ser Ala Leu Thr Cys His Leu  
 705 710 715 720

Cys Gly His Leu Lys Gln Cys His Gly Gln Glu Asp Gly Gly Gln Thr  
 725 730 735

Pro Val Met Ala Ser Pro Cys Cys Gly Cys Cys Cys Gly Asp Arg Ser  
 740 745 750

Ser Pro Pro Thr Thr Pro Leu Arg Ala Pro Asp Pro Ser Pro Gly Gly  
 755 760 765

Val Pro Leu Glu Ala Ser Leu Cys Pro Ala Ser Leu Ala Pro Ser Gly  
 770 775 780

Ile Ser Glu Lys Ser Lys Ser Ser Ser Ser Phe His Pro Ala Pro Gly  
 785 790 795 800

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Asn Ala Gln Ser Ser Ser Gln Thr Pro Lys Ile Val Asn Phe Val Ser  
805 810 815

Val Gly Pro Thr Tyr Met Arg Val Ser  
820 825

<210> 13  
<211> 107  
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<213> Artificial

<220>  
<223> Huanized Polypeptide

<220>  
<221> PEPTIDE  
<222> (1)..(107)

<400> 13

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

Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Asn Asn 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 Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Ser Asn Leu Pro Trp  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105

<210> 14  
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<220>  
<223> hunaized polypeptide

<220>  
<221> PEPTIDE  
<222> (1)..(120)

&lt;400&gt; 14

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

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

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

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

Ser Val Lys Asp Arg Phe Thr Leu Ser Arg Asp Asp Ser Lys Asn Thr  
 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 Thr Arg Asp Arg Gly Trp Gly Ala Met Asp Tyr Trp Gly Gln  
 100 105 110

Gly Thr Thr Val Thr Val Ser Ser  
 115 120

&lt;210&gt; 15

&lt;211&gt; 120

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; humanized polypeptide

&lt;220&gt;

&lt;221&gt; PEPTIDE

&lt;222&gt; (1)..(120)

&lt;400&gt; 15

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

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

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

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

PhoenixTemp22539.tmp.txt

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
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 Thr Arg Asp Arg Gly Trp Gly Ala Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Val Thr Val Ser Ser  
115 120

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<212> PRT  
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<222> (21)..(508)

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<223> anti-IL4R scFv

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<222> (21)..(139)  
<223> variable heavy chain

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<222> (140)..(155)  
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<220>  
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<222> (268)..(493)
<223> human IgG1-Fc domain

<220>
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<223> human IgG1-Fc domain

<400> 16

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
-20 -15 -10 -5

Ala Gly Asn Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val
-1 1 5 10

Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr
15 20 25

Phe Asn Thr Asn Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly
30 35 40

Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr
45 50 55 60

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

Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Asp Arg Gly Trp Gly Ala Met Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly
110 115 120

Ser Gly Gly Gly Gly Ser Gly Gly Gly Thr Gly Asp Ile Gln Met Thr
125 130 135 140

Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile
145 150 155

Thr Cys Ser Ala Ser Gln Asp Ile Asn Asn Tyr Leu Asn Trp Tyr Gln
160 165 170

Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Tyr Thr Ser Ser
175 180 185

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Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr  
 190 195 200  
 Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr  
 205 210 215 220  
 Tyr Tyr Cys Gln Gln Phe Ser Asn Leu Pro Trp Thr Phe Gly Gly Gly  
 225 230 235  
 Thr Lys Leu Glu Ile Ser Ser Ser Ser Gly Ser Asp Lys Thr His Thr  
 240 245 250  
 Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe  
 255 260 265  
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro  
 270 275 280  
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val  
 285 290 295 300  
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr  
 305 310 315  
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val  
 320 325 330  
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys  
 335 340 345  
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser  
 350 355 360  
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro  
 365 370 375 380  
 Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val  
 385 390 395  
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly  
 400 405 410  
 Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp  
 415 420 425  
 Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp  
 430 435 440

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Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His  
445 450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Ser Ser Ser  
465 470 475

Ser Ser Ser Ala Trp Ser His Pro Gln Phe Glu Lys  
480 485

<210> 17  
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<212> PRT  
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<220>  
<223> humanized Polypeptide

<220>  
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<222> (267)..(272)  
<223> linker sequence

<220>  
<221> MISC\_FEATURE  
<222> (273)..(498)  
<223> human IgG-1 Fc part

&lt;220&gt;

&lt;221&gt; MISC FEATURE

&lt;222&gt; (498)..(513)

&lt;223&gt; FlexStrepTag-II

&lt;400&gt; 17

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
 -20 -15 -10 -5

Ala Gly Asn Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val  
 -1 1 5 10

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ser Phe Ser Gly Phe Ser  
 15 20 25

Leu Ser Thr Ser Gly Met Gly Val Ser Trp Val Arg Gln Ala Pro Gly  
 30 35 40

Lys Gly Leu Glu Trp Leu Ala His Ile Tyr Trp Asp Asp Asp Lys Arg  
 45 50 55 60

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

Lys Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
 80 85 90

Ala Val Tyr Tyr Cys Ala Arg Arg Glu Thr Val Phe Tyr Trp Tyr Phe  
 95 100 105

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly  
 110 115 120

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Thr Gly Asp Ile Val Met  
 125 130 135 140

Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly Asp Arg Ala Thr  
 145 150 155

Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Tyr  
 160 165 170

Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile  
 175 180 185

Tyr Ala Ala Ser Asn Leu Glu Ser Gly Val Pro Asp Arg Phe Ser Gly  
 190 195 200

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala

205		210		215		220
Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Asn Glu Asp Pro Pro		225		230		235
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Ser Ser Ser Ser Gly Ser		240		245		250
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly		255		260		265
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met		270		275		280
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His		285		290		295
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val		305		310		315
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr		320		325		330
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly		335		340		345
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile		350		355		360
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val		365		370		375
Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser		385		390		395
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu		400		405		410
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro		415		420		425
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val		430		435		440
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met		445		450		455
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser						

465

470

475

Pro Gly Ser Ser Ser Ser Ser Ser Ala Trp Ser His Pro Gln Phe Glu  
480 485 490

Lys