

765-01 PCT Sequence file Final_ST25.txt
SEQUENCE LISTING

<110> Takis s.r.l.
<120> Immunotherapy against ErbB-3 receptor
<130> 765-1 PCT
<150> IT RM2010A000577
<151> 2010-11-02
<160> 68
<170> PatentIn version 3.5
<210> 1
<211> 4032
<212> DNA
<213> Artificial Sequence
<220>
<223> Codon optimized coding sequence encoding full length human HER3,
wherein the encoded HER3 has a His to Phe mutation at position
584

<400> 1
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<210> 2
 <211> 1309
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> human HER3 with a His to Phe mutation at position 584

<400> 2

Met Arg Ala Asn Asp Ala Leu Gln Val Leu Gly Leu Leu Phe Ser Leu
 1 5 10 15

Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
 20 25 30

Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn Gln Tyr Gln Thr
 35 40 45

Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met Gly Asn Leu Glu
 50 55 60

Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
 65 70 75 80

Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Thr
 85 90 95

Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
 100 105 110

Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
 115 120 125

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His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr Glu Ile Leu Ser
130 135 140

Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145 150 155 160

Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala Glu Ile Val Val
165 170 175

Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu Val Cys Lys Gly
180 185 190

Arg Cys Trp Gly Pro Gly Ser Glu Asp Cys Gln Thr Leu Thr Lys Thr
195 200 205

Ile Cys Ala Pro Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
210 215 220

Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225 230 235 240

Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
245 250 255

Pro Arg Cys Pro Gln Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
260 265 270

Glu Pro Asn Pro His Thr Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
275 280 285

Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Ser Cys Val Arg Ala
290 295 300

Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305 310 315 320

Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
325 330 335

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

Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
355 360 365

Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
370 375 380

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

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Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
405 410 415

Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
420 425 430

Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
435 440 445

Ile Ser Ala Gly Arg Ile Tyr Ile Ser Ala Asn Arg Gln Leu Cys Tyr
450 455 460

His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly Pro Thr Glu Glu
465 470 475 480

Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp Cys Val Ala Glu
485 490 495

Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
500 505 510

Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Gly Gly Val
515 520 525

Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu Pro Arg Glu Phe Ala
530 535 540

His Glu Ala Glu Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545 550 555 560

Gly Thr Ala Thr Cys Asn Gly Ser Gly Ser Asp Thr Cys Ala Gln Cys
565 570 575

Ala His Phe Arg Asp Gly Pro Phe Cys Val Ser Ser Cys Pro His Gly
580 585 590

Val Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Val Gln Asn
595 600 605

Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
610 615 620

Glu Leu Gln Asp Cys Leu Gly Gln Thr Leu Val Leu Ile Gly Lys Thr
625 630 635 640

His Leu Thr Met Ala Leu Thr Val Ile Ala Gly Leu Val Val Ile Phe
645 650 655

Met Met Leu Gly Gly Thr Phe Leu Tyr Trp Arg Gly Arg Arg Ile Gln
660 665 670

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Asn Lys Arg Ala Met Arg Arg Tyr Leu Glu Arg Gly Glu Ser Ile Glu
675 680 685

Pro Leu Asp Pro Ser Glu Lys Ala Asn Lys Val Leu Ala Arg Ile Phe
690 695 700

Lys Glu Thr Glu Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Val Phe
705 710 715 720

Gly Thr Val His Lys Gly Val Trp Ile Pro Glu Gly Glu Ser Ile Lys
725 730 735

Ile Pro Val Cys Ile Lys Val Ile Glu Asp Lys Ser Gly Arg Gln Ser
740 745 750

Phe Gln Ala Val Thr Asp His Met Leu Ala Ile Gly Ser Leu Asp His
755 760 765

Ala His Ile Val Arg Leu Leu Gly Leu Cys Pro Gly Ser Ser Leu Gln
770 775 780

Leu Val Thr Gln Tyr Leu Pro Leu Gly Ser Leu Leu Asp His Val Arg
785 790 795 800

Gln His Arg Gly Ala Leu Gly Pro Gln Leu Leu Leu Asn Trp Gly Val
805 810 815

Gln Ile Ala Lys Gly Met Tyr Tyr Leu Glu Glu His Gly Met Val His
820 825 830

Arg Asn Leu Ala Ala Arg Asn Val Leu Leu Lys Ser Pro Ser Gln Val
835 840 845

Gln Val Ala Asp Phe Gly Val Ala Asp Leu Leu Pro Pro Asp Asp Lys
850 855 860

Gln Leu Leu Tyr Ser Glu Ala Lys Thr Pro Ile Lys Trp Met Ala Leu
865 870 875 880

Glu Ser Ile His Phe Gly Lys Tyr Thr His Gln Ser Asp Val Trp Ser
885 890 895

Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ala Glu Pro Tyr
900 905 910

Ala Gly Leu Arg Leu Ala Glu Val Pro Asp Leu Leu Glu Lys Gly Glu
915 920 925

Arg Leu Ala Gln Pro Gln Ile Cys Thr Ile Asp Val Tyr Met Val Met
930 935 940

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Val Lys Cys Trp Met Ile Asp Glu Asn Ile Arg Pro Thr Phe Lys Glu
945 950 955 960

Leu Ala Asn Glu Phe Thr Arg Met Ala Arg Asp Pro Pro Arg Tyr Leu
965 970 975

Val Ile Lys Arg Glu Ser Gly Pro Gly Ile Ala Pro Gly Pro Glu Pro
980 985 990

His Gly Leu Thr Asn Lys Lys Leu Glu Glu Val Glu Leu Glu Pro Glu
995 1000 1005

Leu Asp Leu Asp Leu Asp Leu Glu Ala Glu Glu Asp Asn Leu Ala
1010 1015 1020

Thr Thr Thr Leu Gly Ser Ala Leu Ser Leu Pro Val Gly Thr Leu
1025 1030 1035

Asn Arg Pro Arg Gly Ser Gln Ser Leu Leu Ser Pro Ser Ser Gly
1040 1045 1050

Tyr Met Pro Met Asn Gln Gly Asn Leu Gly Glu Ser Cys Gln Glu
1055 1060 1065

Ser Ala Val Ser Gly Ser Ser Glu Arg Cys Pro Arg Pro Val Ser
1070 1075 1080

Leu His Pro Met Pro Arg Gly Cys Leu Ala Ser Glu Ser Ser Glu
1085 1090 1095

Gly His Val Thr Gly Ser Glu Ala Glu Leu Gln Glu Lys Val Ser
1100 1105 1110

Met Cys Arg Ser Arg Ser Arg Ser Arg Ser Pro Arg Pro Arg Gly
1115 1120 1125

Asp Ser Ala Tyr His Ser Gln Arg His Ser Leu Leu Thr Pro Val
1130 1135 1140

Thr Pro Leu Ser Pro Pro Gly Leu Glu Glu Glu Asp Val Asn Gly
1145 1150 1155

Tyr Val Met Pro Asp Thr His Leu Lys Gly Thr Pro Ser Ser Arg
1160 1165 1170

Glu Gly Thr Leu Ser Ser Val Gly Leu Ser Ser Val Leu Gly Thr
1175 1180 1185

Glu Glu Glu Asp Glu Asp Glu Glu Tyr Glu Tyr Met Asn Arg Arg
1190 1195 1200

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Arg Arg His Ser Pro Pro His Pro Pro Arg Pro Ser Ser Leu Glu
 1205 1210 1215

Glu Leu Gly Tyr Glu Tyr Met Asp Val Gly Ser Asp Leu Ser Ala
 1220 1225 1230

Ser Leu Gly Ser Thr Gln Ser Cys Pro Leu His Pro Val Pro Ile
 1235 1240 1245

Met Pro Thr Ala Gly Thr Thr Pro Asp Glu Asp Tyr Glu Tyr Met
 1250 1255 1260

Asn Arg Gln Arg Asp Gly Gly Gly Pro Gly Gly Asp Tyr Ala Ala
 1265 1270 1275

Met Gly Ala Cys Pro Ala Ser Glu Gln Gly Tyr Glu Glu Met Arg
 1280 1285 1290

Ala Phe Gln Gly Pro Gly His Gln Ala Pro His Val His Tyr Ala
 1295 1300 1305

Arg

<210> 3
 <211> 1929
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Codon optimized coding sequence encoding the human HER3
 extracellular domain, wherein the encoded HER3 domain has a His
 to Phe mutation at position 584

<400> 3
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 aatctcaggg tcgtgcgcgg caccaggtg tacgacggca agttcgccat cttcgtgatg 360
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 agaagctgcc cccctgccca cgaggtctgc aagggcagat gctggggccc tggcagcgag 600
 gactgccaga ccctgaccaa gaccatctgc gcccctcagt gcaacggcca ctgcttcggc 660
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765-01 PCT Sequence file Final_ST25.txt

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cagccccctgg tgtacaacaa gctgaccttc cagctggaac ccaacccccca caccaagtac 840
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<210> 4
 <211> 641
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Human HER3 extracellular domain, wherein the encoded HER3 domain has a His to Phe mutation at position 584

<400> 4

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 1 5 10 15

Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
 20 25 30

Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn Gln Tyr Gln Thr
 35 40 45

Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met Gly Asn Leu Glu
 50 55 60

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Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65 70 75 80

Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Thr
85 90 95

Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
100 105 110

Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
115 120 125

His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr Glu Ile Leu Ser
130 135 140

Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145 150 155 160

Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala Glu Ile Val Val
165 170 175

Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu Val Cys Lys Gly
180 185 190

Arg Cys Trp Gly Pro Gly Ser Glu Asp Cys Gln Thr Leu Thr Lys Thr
195 200 205

Ile Cys Ala Pro Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
210 215 220

Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225 230 235 240

Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
245 250 255

Pro Arg Cys Pro Gln Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
260 265 270

Glu Pro Asn Pro His Thr Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
275 280 285

Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Ser Cys Val Arg Ala
290 295 300

Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305 310 315 320

Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
325 330 335

765-01 PCT Sequence file Final_ST25.txt

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

Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
355 360 365

Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
370 375 380

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

Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
405 410 415

Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
420 425 430

Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
435 440 445

Ile Ser Ala Gly Arg Ile Tyr Ile Ser Ala Asn Arg Gln Leu Cys Tyr
450 455 460

His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly Pro Thr Glu Glu
465 470 475 480

Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp Cys Val Ala Glu
485 490 495

Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
500 505 510

Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Gly Gly Val
515 520 525

Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu Pro Arg Glu Phe Ala
530 535 540

His Glu Ala Glu Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545 550 555 560

Gly Thr Ala Thr Cys Asn Gly Ser Gly Ser Asp Thr Cys Ala Gln Cys
565 570 575

Ala His Phe Arg Asp Gly Pro Phe Cys Val Ser Ser Cys Pro His Gly
580 585 590

Val Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Val Gln Asn
595 600 605

765-01 PCT Sequence file Final_ST25.txt

Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
610 615 620

Glu Leu Gln Asp Cys Leu Gly Gln Thr Leu Val Leu Ile Gly Lys Thr
625 630 635 640

His

<210> 5
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence of variable light chain region of antibody A3

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tctgggggtcc cagacagggt cagtggcagt ggatcaggga cagatttcac actcaagatc 240
agcagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttcca 300
ttcacgttcg gcacggggac aaaattggaa ataaaacggg ctgatgctgc accaactgta 360

<210> 6
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence of variable heavy chain region of antibody A3

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cagccttttag ggaagggctt ggagtggctg gccaacattt ggtggaatga tgataagtac 180
tataattcag ccctgaagag ccggctcaca atctccaagg atacctcaa caaccagggt 240
ttcctcaaga tctccagtgt ggacactgca gatgctgcca catactactg tgttcaaata 300
gctaaccctt attggtactt cgatgtctgg ggcgcaggga ccacggtcac cgtctcctca 360
gccaaaacga caccc 375

<210> 7
<211> 120
<212> PRT
<213> Mus musculus

<220>
<221> BINDING

765-01 PCT Sequence file Final_ST25.txt

<222> (1)..(120)

<223> Variable light chain region of antibody A3

<400> 7

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

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

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

Pro Lys Leu Leu Ile Tyr Arg Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Phe Thr Phe Gly Thr Gly Thr Lys Leu Glu Ile Lys
100 105 110

Arg Ala Asp Ala Ala Pro Thr Val
115 120

<210> 8

<211> 125

<212> PRT

<213> Mus musculus

<220>

<221> BINDING

<222> (1)..(125)

<223> Variable heavy chain region of antibody A3

<400> 8

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

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

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

Trp Leu Ala Asn Ile Trp Trp Asn Asp Asp Lys Tyr Tyr Asn Ser Ala
50 55 60

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

765-01 PCT Sequence file Final_ST25.txt

Phe Leu Lys Ile Ser Ser Val Asp Thr Ala Asp Ala Ala Thr Tyr Tyr
85 90 95

Cys Val Gln Ile Ala Asn Pro Tyr Trp Tyr Phe Asp Val Trp Gly Ala
100 105 110

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

<210> 9
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence of variable light chain region of antibody A4

<400> 9
cagattgttc tcaccagtc tccagcaatc atgtctgcat ctccagggga gaaggtcacc 60
atgacctgca gggccaggtc aagtgttaagt tccagttact tgcactggta ccagcagaag 120
ccaggatctt cccccaaact ctggatttat agcacatcca atctggcttt aggagtcca 180
gctcgcttca gtggcagtggt gtctgggacc tcttactctc tcacaatcag tagtgtggag 240
gctgaggatg ctgccactta ttactgccag cagtatgata gttccccatt cacgttcggc 300
acggggacaa aattggaaat aaaacgggct gatgctgcac caactgta 348

<210> 10
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence of variable heavy chain region of antibody A4

<400> 10
caggtccaac tgcagcaacc tgggtctgag ctggtgaggt ctggagcttc agtgaagctg 60
tcctgcaagg cttctggcta cacattcacc atcttctgga tccactgggt gaagcagagg 120
cctggacaag gccttgagtg gattggaaat atttatcctg gtagtggtgg aactaactac 180
gatgagaaat tcaagagcaa ggccacactg actgtagaca cttttccag cacagcctac 240
atgcagctca gtagcctgac atctgaggac tctgcggtct attactgtac aagatggggg 300
actgggaagg actactgggg ccaaggcacc actctcaaag tctcctcagc caaacgaca 360
ccc 363

<210> 11
<211> 116
<212> PRT
<213> Mus musculus

<220>
<221> BINDING

765-01 PCT Sequence file Final_ST25.txt

<222> (1)..(116)

<223> Variable light chain region of antibody A4

<400> 11

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

Glu Lys Val Thr Met Thr Cys Arg Ala Arg Ser Ser Val Ser Ser Ser
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
35 40 45

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

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Val Glu
65 70 75 80

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

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

Ala Pro Thr Val
115

<210> 12

<211> 121

<212> PRT

<213> Mus musculus

<220>

<221> BINDING

<222> (1)..(121)

<223> Variable heavy chain region of antibody A4

<400> 12

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

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

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

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

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

765-01 PCT Sequence file Final_ST25.txt

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

Thr Arg Trp Gly Thr Gly Lys Asp Tyr Trp Gly Gln Gly Thr Thr Leu
100 105 110

Lys Val Ser Ser Ala Lys Thr Thr Pro
115 120

<210> 13
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized light chain CDR region of A4 antibody

<400> 13

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Ser Ser Val Ser Ser Ser
20 25 30

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

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

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

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro
85 90 95

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

<210> 14
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized heavy chain CDR region of A4 antibody

<400> 14

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ile Phe
20 25 30

765-01 PCT Sequence file Final_ST25.txt

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

Gly Asn Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

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

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

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

Thr Val Ser Ser
115

<210> 15
<211> 327
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence for humanized light chain CDR region of A4 antibody

<400> 15
gaaattgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtag cagtgttagc agcagctact tacactggta ccagcagaaa 120
cctggccagg ctcccaggct cctcatctat agtacgtcca acagggccac tggcatccca 180
gacaggttca gtggcagtggt gtctgggaca gacttcactc tcaccatcag cagactggag 240
cctgaagatt ttgcagtgtg ttactgtcag cagtatgaca gctcaccttt cacttttggc 300
caggggacca agctcgagat caaacgt 327

<210> 16
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence for humanized heavy chain CDR region of A4 antibody

<400> 16
caggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggata caccttcacc atcttttggg tgactgggt ggcagagggc 120
cctggacaag ggcttgagtg gatgggaaac atctaccctg gcagtgggtg cacaactat 180
gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240
atggagctga gcaggctgag atctgacgac acggccgtgt attactgtac gagatgggga 300

acgggcaagg actactgggg ccaaggaacc ctggtcaccg tctcctca

348

<210> 17
 <211> 16
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(16)
 <223> amino acid sequence of CDR1 of variable light chain region of
 antibody A3 (mus musculus)

<400> 17

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

<210> 18
 <211> 7
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(7)
 <223> amino acid sequence of CDR2 of variable light chain region of
 antibody A3 (mus musculus)

<400> 18

Arg Val Ser Asn Arg Phe Ser
 1 5

<210> 19
 <211> 9
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(9)
 <223> amino acid sequence of CDR3 of variable light chain region of
 antibody A3 (mus musculus)

<400> 19

Phe Gln Gly Ser His Val Pro Phe Thr
 1 5

<210> 20
 <211> 7
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(7)
 <223> amino acid sequence of CDR1 of variable heavy chain region of

765-01 PCT Sequence file Final_ST25.txt
antibody A3 (mus musculus)

<400> 20

Thr Tyr Gly Met Gly Val Gly
1 5

<210> 21
<211> 16
<212> PRT
<213> Mus musculus

<220>
<221> Binding
<222> (1)..(16)
<223> amino acid sequence of CDR2 of variable heavy chain region of
antibody A3 (mus musculus)

<400> 21

Asn Ile Trp Trp Asn Asp Asp Lys Tyr Tyr Asn Ser Ala Leu Lys Ser
1 5 10 15

<210> 22
<211> 10
<212> PRT
<213> Mus musculus

<220>
<221> Binding
<222> (1)..(10)
<223> amino acid sequence of CDR3 of variable heavy chain region of
antibody A3 (mus musculus)

<400> 22

Ile Ala Asn Pro Tyr Trp Tyr Phe Asp Val
1 5 10

<210> 23
<211> 12
<212> PRT
<213> Mus musculus

<220>
<221> Binding
<222> (1)..(12)
<223> amino acid sequence of CDR1 of variable light chain region of
antibody A4 (mus musculus)

<400> 23

Arg Ala Arg Ser Ser Val Ser Ser Ser Tyr Leu His
1 5 10

<210> 24
<211> 7
<212> PRT
<213> Mus musculus

765-01 PCT Sequence file Final_ST25.txt

<220>
 <221> Binding
 <222> (1)..(7)
 <223> amino acid sequence of CDR2 of variable light chain region of
 antibody A4 (mus musculus)

<400> 24

Ser Thr Ser Asn Leu Ala Leu
 1 5

<210> 25
 <211> 9
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(9)
 <223> amino acid sequence of CDR3 of variable light chain region of
 antibody A4 (mus musculus)

<400> 25

Gln Gln Tyr Asp Ser Ser Pro Phe Thr
 1 5

<210> 26
 <211> 5
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(5)
 <223> amino acid sequence of CDR1 of variable heavy chain region of
 antibody A4 (mus musculus)

<400> 26

Ile Phe Trp Ile His
 1 5

<210> 27
 <211> 17
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(17)
 <223> amino acid sequence of CDR2 of variable heavy chain region of
 antibody A4 (mus musculus)

<400> 27

Asn Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asp Glu Lys Phe Lys
 1 5 10 15

Ser

765-01 PCT Sequence file Final_ST25.txt

<210> 28
 <211> 7
 <212> PRT
 <213> Mus musculus

<220>
 <221> Binding
 <222> (1)..(7)
 <223> amino acid sequence of CDR3 of variable heavy chain region of
 antibody A4 (mus musculus)

<400> 28

Trp Gly Thr Gly Lys Asp Tyr
 1 5

<210> 29
 <211> 12
 <212> PRT
 <213> Artificial sequence

<220>
 <223> amino acid sequence of CDR1 of variable light chain region of
 humanized antibody A4

<400> 29

Arg Ala Ser Ser Ser Val Ser Ser Ser Tyr Leu His
 1 5 10

<210> 30
 <211> 7
 <212> PRT
 <213> Artificial sequence

<220>
 <223> amino acid sequence of CDR2 of variable light chain region of
 humanized antibody A4

<400> 30

Ser Thr Ser Asn Arg Ala Thr
 1 5

<210> 31
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> amino acid sequence of CDR1 of variable heavy chain region of
 humanized antibody A4

<400> 31

Ile Phe Trp Met His
 1 5

<210> 32
 <211> 17
 <212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of CDR2 of variable heavy chain region of humanized antibody A4

<400> 32

Asn Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 33

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> 8 amino acids of the epitope of ErbB3

<400> 33

Gln Cys Asn Gly His Cys Phe Gly
1 5

<210> 34

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> 8 amino acids of the epitope of ErbB3

<400> 34

Cys Asn Gly His Cys Phe Gly Pro
1 5

<210> 35

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> 8 amino acids of the epitope of ErbB3

<400> 35

Asn Gly His Cys Phe Gly Pro Asn
1 5

<210> 36

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> 8 amino acids of the epitope of ErbB3

<400> 36

Gly His Cys Phe Gly Pro Asn Pro
1 5

<210> 37
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> 8 amino acids of the epitope of ErbB3
<400> 37

His Cys Phe Gly Pro Asn Pro Asn
1 5

<210> 38
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> 8 amino acids of the epitope of ErbB3
<400> 38

Cys Phe Gly Pro Asn Pro Asn Gln
1 5

<210> 39
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> 8 amino acids of the epitope of ErbB3
<400> 39

Phe Gly Pro Asn Pro Asn Gln Cys
1 5

<210> 40
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> 8 amino acids of the epitope of ErbB3
<400> 40

Gly Pro Asn Pro Asn Gln Cys Cys
1 5

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> 9 amino acids of the epitope of ErbB3

<400> 41

Gln Cys Asn Gly His Cys Phe Gly Pro
1 5

<210> 42

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 9 amino acids of the epitope of ErbB3

<400> 42

Cys Asn Gly His Cys Phe Gly Pro Asn
1 5

<210> 43

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 9 amino acids of the epitope of ErbB3

<400> 43

Asn Gly His Cys Phe Gly Pro Asn Pro
1 5

<210> 44

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 9 amino acids of the epitope of ErbB3

<400> 44

Gly His Cys Phe Gly Pro Asn Pro Asn
1 5

<210> 45

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 9 amino acids of the epitope of ErbB3

<400> 45

His Cys Phe Gly Pro Asn Pro Asn Gln
1 5

<210> 46

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 9 amino acids of the epitope of ErbB3

<400> 46

Cys Phe Gly Pro Asn Pro Asn Gln Cys
1 5

<210> 47

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 9 amino acids of the epitope of ErbB3

<400> 47

Phe Gly Pro Asn Pro Asn Gln Cys Cys
1 5

<210> 48

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10 amino acids of the epitope of ErbB3

<400> 48

Gln Cys Asn Gly His Cys Phe Gly Pro Asn
1 5 10

<210> 49

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10 amino acids of the epitope of ErbB3

<400> 49

Cys Asn Gly His Cys Phe Gly Pro Asn Pro
1 5 10

<210> 50

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10 amino acids of the epitope of ErbB3

<400> 50

Asn Gly His Cys Phe Gly Pro Asn Pro Asn
1 5 10

<210> 51

<211> 10

<212> PRT

<213> Artificial Sequence

765-01 PCT Sequence file Final_ST25.txt

<220>
<223> 10 amino acids of the epitope of ErbB3

<400> 51

Gly His Cys Phe Gly Pro Asn Pro Asn Gln
1 5 10

<210> 52
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> 10 amino acids of epitope of ErbB3

<400> 52

His Cys Phe Gly Pro Asn Pro Asn Gln Cys
1 5 10

<210> 53
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> 10 amino acids of the epitope of ErbB3

<400> 53

Cys Phe Gly Pro Asn Pro Asn Gln Cys Cys
1 5 10

<210> 54
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> 11 amino acids of epitope of ErbB3

<400> 54

Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro
1 5 10

<210> 55
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> 11 amino acids of the epitope of ErbB3

<400> 55

Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
1 5 10

<210> 56
<211> 11

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<212> PRT
<213> Artificial Sequence

<220>
<223> 11 amino acids of the epitope of ErbB3

<400> 56
Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln
1          5          10

<210> 57
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> 11 amino acids of the epitope ErbB3

<400> 57
Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys
1          5          10

<210> 58
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> 11 amino acids of the epitope of ErbB3

<400> 58
His Cys Phe Gly Pro Asn Pro Asn Gln Cys Cys
1          5          10

<210> 59
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> 12 amino acids of the epitope of ErbB3

<400> 59
Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
1          5          10

<210> 60
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> 12 amino acids of the epitope of ErbB3

<400> 60
Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln
1          5          10

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765-01 PCT Sequence file Final_ST25.txt

<210> 61
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 12 amino acids of the epitope of ErbB3
 <400> 61

Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys
 1 5 10

<210> 62
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 12 amino acids of the epitope of ErbB3
 <400> 62

Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys Cys
 1 5 10

<210> 63
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 13 amino acids of the epitope of ErbB3
 <400> 63

Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln
 1 5 10

<210> 64
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 13 amino acids of the epitope of ErbB3
 <400> 64

Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys
 1 5 10

<210> 65
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 13 amino acids of the epitope of ErbB3
 <400> 65

Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys Cys
 1 5 10

765-01 PCT Sequence file Final_ST25.txt

<210> 66
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 14 amino acids of the epitope of ErbB3
 <400> 66

Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys Cys
 1 5 10

<210> 67
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 14 amino acids of the epitope of ErbB3
 <400> 67

Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys
 1 5 10

<210> 68
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 15 amino acids of the epitope of ErbB3
 <400> 68

Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn Gln Cys Cys
 1 5 10 15