

PCB903030GCC.txt

<110> Green Cross Corporation
Mogam Institute for Biomedical Research

<120> FUSION PROTEINS COMPRISING ANTI-MESOTHELIN ANTIBODY, ANTI-CD3
ANTIBODY OR ANTI-EGFR ANTIBODY AND BISPECIFIC OR TRISPECIFIC
ANTIBODY COMPRISING THE SAME AND USE THEREOF

<130> PCB903030GCC

<150> US 62/826,442
<151> 2019-03-29

<160> 48

<170> KoPatentIn 3.0

<210> 1
<211> 1202
<212> PRT
<213> Artificial Sequence

<220>
<223> First fusion protein

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20 25 30
Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp
35 40 45
Val Ser Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
50 55 60
Lys Leu Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Pro Gly Val Pro Ser
65 70 75 80
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95
Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr
100 105 110
Ser Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
115 120 125
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
130 135 140
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
145 150 155 160
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
165 170 175
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
180 185 190
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
195 200 205
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
210 215 220

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Val Thr Lys Ser Phe Asn Arg Gly Glu Cys Ser Gly Gly Gly Ser Gly
 225 230 235 240
 Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly
 245 250 255
 Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 260 265 270
 Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Thr Ser Val Lys Val
 275 280 285
 Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr Phe Ile Gln Trp
 290 295 300
 Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Phe
 305 310 315 320
 Pro Gly Ser Gly Asn Thr Lys Tyr Ser Gln Lys Phe Gln Gly Arg Val
 325 330 335
 Thr Ile Thr Arg Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser
 340 345 350
 Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gly
 355 360 365
 Gly Tyr Gln Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 370 375 380
 Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
 385 390 395 400
 Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
 405 410 415
 Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
 420 425 430
 Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
 435 440 445
 Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
 450 455 460
 Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
 465 470 475 480
 Val Asp Lys Lys Val Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 485 490 495
 Gly Gly Gly Ser Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val
 500 505 510
 Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala
 515 520 525
 Val Thr Thr Ser Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln
 530 535 540
 Ala Pro Arg Gly Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr
 545 550 555 560
 Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr
 565 570 575
 Leu Ser Gly Ala Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu
 580 585 590

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Trp Tyr Ser Asn Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val
 595 600 605
 Leu Gly Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser
 610 615 620
 Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser
 625 630 635 640
 Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser
 645 650 655
 Pro Val Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn
 660 665 670
 Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp
 675 680 685
 Lys Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr
 690 695 700
 Val Glu Lys Thr Val Ala Pro Thr Glu Cys Ser Gly Gly Gly Ser Gly
 705 710 715 720
 Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly
 725 730 735
 Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 740 745 750
 Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
 755 760 765
 Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Thr Tyr Ala Met Asn Trp
 770 775 780
 Val Arg Gln Ala Ser Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg
 785 790 795 800
 Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
 805 810 815
 Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
 820 825 830
 Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
 835 840 845
 His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly
 850 855 860
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 865 870 875 880
 Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
 885 890 895
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 900 905 910
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 915 920 925
 Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 930 935 940
 Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
 3 페이지

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945 950 955 960
 Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
 965 970 975
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly
 980 985 990
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
 995 1000 1005
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
 1010 1015 1020
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
 1025 1030 1035 1040
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
 1045 1050 1055
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
 1060 1065 1070
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
 1075 1080 1085
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Arg Val
 1090 1095 1100
 Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
 1105 1110 1115 1120
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
 1125 1130 1135
 Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
 1140 1145 1150
 Val Leu Val Ser Asp Gly Ser Phe Thr Leu Tyr Ser Lys Leu Thr Val
 1155 1160 1165
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
 1170 1175 1180
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
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 Pro Gly

<210> 2
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding First fusion protein

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 gtgtcagggg cttgtgtgta catccaaatg acgcagagtc cticctcact gtctgcatct 120
 gtaggagacc gggtagccat aacgtgccgg gcgtcacagg acgttagtac cgcggttgca 180
 tggtagcaac aaaagcccggaaggcccct aagctcttga ttacagtgc tagctacagg 240

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tatccagggg tgccgagccg attctctgga tctggaagtg gcacggatit cactctgacc	300
atttcatcac tticagccitga ggatttcgcg acatactact gccaacaaca ctatagtaca	360
ccctggacit ttggcggcgg gactaaactc gagataaaaa gaacggtcgc ggcaccgtcc	420
gtgttcatct ttccgcctag tgatgagcag ctcaaatcag gtaccgccag ttagtatgc	480
cttctcaaca atttctatcc cagggaggct aaagtacaat ggaagggtga taacgcgttg	540
cagagcggca acagtcaaga gagcgtgact gacgaggatt caaaagatag tacttacagc	600
ctgtctagca cgctgactct gagcaaagcg gactatgaga agcataaagt gtatgcgtgt	660
gaagtgcac atcagggctt gagtagccca gtcacaaaat catitaaatag aggagagtgc	720
tctggcggag gctctggagg tggaagtga ggagggtgggt ctgaagggtg cggcagtgag	780
ggaggaggca gcgaagggtg cggatcaggc gggggttctg gagagggtcca actggtccaa	840
agtgggtccg aggtgaagaa acccggcact tcagtaaagg tgagttgcaa ggcttctggg	900
tactcttita ctctctactt catccagtgg gtgcgacaag ccccccggca gggctttgag	960
tggatcggat ggatttttcc aggatctggc aacacaaaat attctcagaa gttccaaggt	1020
cgagtcacga taacacgaga caccagtaca agtaccgcat acatggagct ctctagcttg	1080
cgaagtgaag acactgcagt gtactattgt gctcgacgcg gcggatatca gtactatttt	1140
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gtattccac tggcggccag ctctaaaagt accagtgggg ggacggctgc tttgggttgc	1260
cttgtcaaag actattttcc agaaccctgc acggtgagct ggaattctgg tgctctgacc	1320
agcggagtac acacattccc cgcagtcttg caaagcagtg ggctttactc cctctcttct	1380
gttgtcacag tcccagtttc atcacttgga actcaaacat atatttgtaa tgtcaatcac	1440
aagccgtcca atacgaaagt ggacaagaag gtcggaggcg gtggatctgg tggaggaggg	1500
tctgggggtg gcgggttcaca agccgtcgtg actcaagaac ccagccctac cgtatctccc	1560
gggggaacag tcaccctgac gtgtcggagt tcaaccggcg ccgtaacgac gagcaattac	1620
gctaactggg tgcaacaaaa accgggtcaa gctccccgag gactgatcgg cggaaaccaat	1680
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ctcacgctta gcggggcaca gccagaggat gaagcagagt attactgcgc attgtggtac	1800
tcaacttgtt gggttttcgg tggggggact aagctgactg tcctcggta gcctaaagca	1860
aacccactg ttacactctt tccccgtct tcagaggagt tgcaagctaa caaggctacc	1920
ttggtttgtt tgattagtga tttttacca ggcgccgtaa ccgtagcatg gaaggccgac	1980
ggatcaccag tgaaagcagg agtagaaacc actaaaccct caaaacaaag caacaacaaa	2040
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tcctgtcagg tcacgcacga gggctccacc gttgagaaga ctgtagctcc cacagaatgc	2160
agtggcggcg ggtccggggg gggtagcgaa gggggaggaa gcgagggggg cggatctgaa	2220
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tcaggaggcg gattgggtgca gccgggaggc tccttgaaac tgagttgcgc cgctagtggg	2340
tttacattta atacctatgc tatgaactgg gtacggcagg ccagcggcaa aggtctggag	2400
tgggtgggta gaataaggtc aaaatacaat aactacgcaa catattacgc agactccgtt	2460
aaagaccgat ttaccatatc acgcgacgat tctaagaaca ctgcatatct ccagatgaat	2520
tccttgaaaa ccgaagatac ggcagtttat tactgcgtca ggcatggcaa cttcggtaac	2580
tcttaigtat ctgtgtttgc gtactggggc cagggaaactc tcgtaccgt ttcatcagcc	2640
tccaccaagg gcccaagcgt ctttcct	2668

<210> 3
 <211> 716
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Second fusion protein

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

PCB903030GCC.txt

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys Ser Gly Gly Gly Ser Gly
 225 230 235 240
 Gly Gly Ser Glu Gly Gly Ser Glu Gly Gly Ser Glu Gly Gly
 245 250 255
 Gly Ser Glu Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 260 265 270
 Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Thr Ser Val Lys Val
 275 280 285
 Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr Phe Ile Gln Trp
 290 295 300
 Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Phe
 305 310 315 320
 Pro Gly Ser Gly Asn Thr Lys Tyr Ser Gln Lys Phe Gln Gly Arg Val
 325 330 335
 Thr Ile Thr Arg Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser
 340 345 350
 Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gly
 355 360 365
 Gly Tyr Gln Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 370 375 380
 Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
 385 390 395 400
 Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
 405 410 415
 Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
 420 425 430
 Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
 435 440 445
 Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
 450 455 460
 Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
 465 470 475 480
 Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
 485 490 495
 Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu
 500 505 510
 Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
 515 520 525
 Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
 530 535 540
 Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
 545 550 555 560
 Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
 565 570 575
 Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
 580 585 590

PCB903030GCC.txt

Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
 595 600 605

Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser
 610 615 620

Arg Asp Glu Leu Thr Glu Asn Gln Val Ser Leu Thr Cys Leu Val Lys
 625 630 635 640

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
 645 650 655

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
 660 665 670

Ser Phe Phe Leu Tyr Ser Trp Leu Thr Val Asp Lys Ser Arg Trp Gln
 675 680 685

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
 690 695 700

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
 705 710 715

<210> 4
 <211> 2148
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Second fusion protein

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 attacttgta gagcgtcaca agacgtctcc actgcagtgg cctgggtatca gcagaaacca 180
 ggggaaggctc ctaagttgct gatctactca gcatcatata ggtatcctgg ggtgccttca 240
 aggttttctg ggtccggatc aggcacagac tttaactca cgattagctc ttgcaacct 300
 gaagatttcg caacttacta ttgtcagcag cactacagta cggcctggac gtttggtggg 360
 ggtaccaa at tggaaatcaa gcgaactgtt gcggcgccca gtgtatttat attccgcct 420
 tcagatgaac aactgaaatc agggacggcg tccgttgttt gcctcttgaa caacttttac 480
 ccgcgcgagg caaaagtca gtggaagggt gataacgcat tgcaatccg caattcacag 540
 gaatcagtga ctgagcagga cagtaaagac tccacttatt ctctcagttc caccctcact 600
 ctctcaaagg ccgactacga gaagcacaag gtctacgcat gtgaagtcac tcatcaggga 660
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 ggcggctctg agggggggcg ttccgaaggc ggagggtagc aaggcggcg atctgaaggt 780
 ggtggtagt gcggaggatc aggggaagt cagttggtgc agtccggagc agaggtgaag 840
 aagcccgaa cctcagtc aa ggttagttgt aaggcatccg ggtactcctt cacaagttac 900
 ttcatccagt gggtagcga ggcaccaggt caaggactcg agtggatagg atggattttc 960

PCB903030GCC.txt

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cccggtcag gaaatactaa gtattcacia aagttccagg gtcgagtac tattacaga      1020
gatactagta ccagtaccgc ctatatggaa ctttctagtc ttaggagcga agacaccgct      1080
gtctattact gtgcgaggag cggggggtat cagtattact ttgactactg ggggcagggg      1140
acattggtaa cgggtgtcatc tgcctccacc aagggcccaa gtgtgttccc acttgcccc      1200
agcagcaagt ctacaagcgg cgggacagct gctctaggtt gcctggttaa ggactatttc      1260
cctgagccag ttacagtaag ttggaatagc ggcgccctta caagtggggt ccatactttt      1320
ccagcagtac tgcagtcgtc gggctctctat agtctagct ctgtggtaac ggtgccatct      1380
agctcacttg gcactcagac ctacatctgc aacgtgaacc ataaaccag caacaccaa      1440
gtcgacaaga aagtgaacc caagtcctgc gataaaactc acacgtgtcc tccatgtcct      1500
gctcccagg cgcagggcg acccagtggt tttctgttct ctcgaaacc taaggatacc      1560
ctaagtattt caccgacccc agaggtagc tgcgtggtgg tggatgtgtc acatgaggac      1620
ccggagggtca aattcaattg gtacgtggac ggcgtggaag ttcacaacgc taaaaccaa      1680
cccaggaag aacagtacaa tagcacatat agagttgtgt cagtcctgac agtgcgtcac      1740
caggattggc tgaatggcaa ggagtacaag tgcaagggtga gcaacaaggc cttgcctgca      1800
ccaatcgaga aaaccatttc taaggccaag ggccaacccc gcgaacccca agtgtgtacc      1860
ctgccccct ctagagacga gctcactgaa aaccagggtga gcttaacttg tctggtgaag      1920
ggattctacc caagcgacat agccgtagaa tgggagagca atggtcaacc cgaaaataac      1980
tataaaacaa ctctctctgt gctggatagc gacggcagtt ttttctgta tagctggctg      2040
accgtggata agtctagatg gcagcagggg aatgtcttta gctgttctgt gatgcacgag      2100
gcgctccata accactacac ccagaagagc ttgagcttga gcccagga      2148

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<210> 5
 <211> 715
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Third fusion protein

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 Ser Pro Gly Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile
 35 40 45
 Gly Thr Asn Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg
 50 55 60
 Leu Leu Ile Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg
 65 70 75 80
 Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser
 85 90 95

PCB903030GCC.txt

Val Glu Ser Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Asn Asn Asn
 100 105 110
 Trp Pro Thr Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Thr
 115 120 125
 Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
 130 135 140
 Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
 145 150 155 160
 Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
 165 170 175
 Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
 180 185 190
 Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
 195 200 205
 Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
 210 215 220
 Thr Lys Ser Phe Asn Arg Gly Glu Cys Ser Gly Gly Gly Ser Gly Gly
 225 230 235 240
 Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
 245 250 255
 Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Gln Val Gln Leu Lys
 260 265 270
 Gln Ser Gly Pro Gly Leu Val Gln Pro Ser Gln Ser Leu Ser Ile Thr
 275 280 285
 Cys Thr Val Ser Gly Phe Ser Leu Thr Asn Tyr Gly Val His Trp Val
 290 295 300
 Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu Gly Val Ile Trp Ser
 305 310 315 320
 Gly Gly Asn Thr Asp Tyr Asn Thr Pro Phe Thr Ser Arg Leu Ser Ile
 325 330 335
 Asn Lys Asp Asn Ser Lys Ser Gln Val Phe Phe Lys Met Asn Ser Leu
 340 345 350
 Gln Ser Asn Asp Thr Ala Ile Tyr Tyr Cys Ala Arg Ala Leu Thr Tyr
 355 360 365
 Tyr Asp Tyr Glu Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
 370 375 380
 Ser Ala Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
 385 390 395 400
 Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
 405 410 415
 Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
 420 425 430
 Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
 435 440 445
 Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
 450

PCB903030GCC.txt
460

450 455
 Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
 465 470 475 480
 Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro
 485 490 495
 Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe
 500 505 510
 Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
 515 520 525
 Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
 530 535 540
 Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
 545 550 555 560
 Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
 565 570 575
 Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
 580 585 590
 Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
 595 600 605
 Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg
 610 615 620
 Asp Glu Leu Thr Glu Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
 625 630 635 640
 Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
 645 650 655
 Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
 660 665 670
 Phe Phe Leu Tyr Ser Trp Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
 675 680 685
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 690 695 700
 Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
 705 710 715

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

<220>
 <223> DNA encoding Third fusion protein

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 agctgcagag caagtcagag tattgttacc aacattcact ggtatcagca gagaaccaac 180
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PCB903030GCC.txt

tttagcgggtt caggtagcgg cactgacttt acactctcta tcaacagcgt ggagtttgaa	300
gataltgtag attactattg tcagcaaat aataattggc ccaccacatt tggagccgga	360
acaaagctag agctgaagag aacagtcgct gctccatcgg tcttcatctt tcttcttagc	420
gacgagcagt taaagtccgg gaccgcctct gtggtgtgtc tgcacaataa cttctatcct	480
agagaggcta aagtgcagtg gaagggtgat aacgcactgc aatcgggcaa ctcacaggag	540
agcgtgacag agcaggacag caaagacagt acatactctc tgagcagcac gttgacgctc	600
agcaaagcgg attatgagaa acataagggtg tacgcttgcg aggttactca ccagggactg	660
agcagccccc tgactaaaag cttaataaga ggcgaatgct ctggcggagg atcaggtggg	720
ggctcagaag gggggggcag cgagggcggc gggagcgaag gcgggggtag tgaaggcggg	780
gggagtgccg gaggtagcgg gcaagtgcag cttaaacagt ctggcccagg actggtacag	840
cctagccaga gcctgtccat tacttgtacc gtctctggct ttctactgac caactacggt	900
gtgactggg tgagacagag tcttgcaaaa ggccttgaat ggctcgggt tatctggtcc	960
ggtggcaata cagattacaa tacacctttc acatcccggc tcagtatcaa taaggataac	1020
tctaaatctc aggtgttctt taaaatgaac tcgctgcaaa gcaatgacac cgccatctat	1080
tactgcgctc gcgcactgac ttattacgac tatgagtttg ctatttggg acaaggaact	1140
ctggtgacag tctctgccgc ctccaccaag ggcacaagtg tgttcccact tgccccagc	1200
agcaagtcta caagcggcgg gacagctgct ctagggtgcc tggtaagga ctatttcct	1260
gagccagtta cagtaagttg gaatagcggc gcccttacaa gtggggtcca tacttttcca	1320
gcagtactgc agtcgtcggg tctctatagt ctgagctctg tggtaacggt gccatctagc	1380
tcacttggca ctcagacctc catctgcaac gtgaaccata aaccagcaa caccaaagtc	1440
gacaagaag ttgaaccaa gtcttgcgat aaaactcaca cgtgtcctcc atgtcctgct	1500
cccaggccg caggcggacc cagtgtgttt ctgtttcctc cgaaacctaa ggatacccta	1560
atgatttcac ggacccaga ggtgacgtgc gtggtgtgg atgtgtcaca tgaggacccg	1620
gaggtcaaat tcaattggta cgtggacggc gtggaagttc acaacgctaa aaccaaacc	1680
aggaagaac agtacaatag cacatataga gttgtgtcag tcttgacagt gctgcaccag	1740
gattggctga atggcaagga gtacaagtgc aaggtgagca acaaggcctt gcctgcacca	1800
atcgagaaaa ccatttctaa ggccaagggc caaccccgcg aacccaagt gtgtaccctg	1860
ccccctcta gagacgagct cactgaaaac caggtgagct taacttgtct ggtgaaggga	1920
ttctaccaa gcgacatagc cgtagaatgg gagagcaatg gtcaaccga aaataactat	1980
aaaacaactc ctctgtgct ggatagcgac ggcagtttt tctgtatag ctggtgacc	2040
gtggataagt ctagatggca gcaggggaat gtctttagct gtctgtgat gcacgaggcg	2100
ctccataacc actacacca gaagagcttg agcttgagcc cagga	2145

<210> 7
<211> 108

PCB903030GCC.txt

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-MSLN Antibody VL

<400> 7
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Ser Thr Ala
 20 25 30
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Ser Ala Ser Tyr Arg Tyr Pro 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 His Tyr Ser Thr Pro Trp
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
 100 105

<210> 8
 <211> 324
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-MSLN Antibody VL

<400> 8
 gacattcaga tgacacagag cccgagtagc cttagtgcca gcgtcggcga tagagttaca 60
 attacttgta gagcgtcaca agacgtctcc actgcagtgg cctggtaica gcagaaacca 120
 gggaaggctc ctaagttgct gatctactca gcatcatata ggtatcctgg ggtgccttca 180
 aggttttctg ggtccggatc aggcacagac ttacactca cgattagctc ttgcaacct 240
 gaagatttcg caacttacta ttgtcagcag cactacagta cgccctggac gtttggtagg 300
 ggtaccaaat tggaaatcaa gcga 324

<210> 9
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-MSLN Antibody VH

<400> 9
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Thr
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30

PCB903030GCC.txt

Phe Ile Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Trp Ile Phe Pro Gly Ser Gly Asn Thr Lys Tyr Ser Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Ser Gly Gly Tyr Gln Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 10
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-MSLN Antibody VH

<400> 10
 gaagtgcagt tgggtgcagtc cggagcagag gtgaagaagc ccggaacctc agtcaaggtt 60
 agttgtaagg catccgggta ctcccttcaca agttacttca tccagtgggt acgccaggca 120
 ccagggtcaag gactcgagtg gataggatgg attttcccg gctcaggaaa tactaagtat 180
 tcacaaaagt tccagggtcg agtgactatt acacgagata ctagtaccag taccgcctat 240
 atggaacttt ctagtcttag gagcgaagac accgctgtct attactgtgc gaggagcggg 300
 gggatatcagt attactttga ctactggggg caggggacat tggtaacggg gtcattct 357

<210> 11
 <211> 722
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15)

<400> 11
 Met Asp Ser Gln Ala Gln Val Leu Met Leu Leu Leu Trp Val Ser
 1 5 10 15
 Gly Thr Cys Gly Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val
 20 25 30
 Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala
 35 40 45
 Val Thr Thr Ser Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln
 50 55 60
 Ala Pro Arg Gly Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr
 65 70 75 80

PCB903030GCC.txt

Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr
 85 90 95
 Leu Ser Gly Ala Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu
 100 105 110
 Trp Tyr Ser Asn Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val
 115 120 125
 Leu Gly Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser
 130 135 140
 Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser
 145 150 155 160
 Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser
 165 170 175
 Pro Val Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn
 180 185 190
 Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp
 195 200 205
 Lys Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr
 210 215 220
 Val Glu Lys Thr Val Ala Pro Thr Glu Cys Ser Gly Gly Gly Ser Gly
 225 230 235 240
 Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly
 245 250 255
 Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 260 265 270
 Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
 275 280 285
 Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Thr Tyr Ala Met Asn Trp
 290 295 300
 Val Arg Gln Ala Ser Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg
 305 310 315 320
 Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
 325 330 335
 Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
 340 345 350
 Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
 355 360 365
 His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly
 370 375 380
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 385 390 395 400
 Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
 405 410 415
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 420 425 430
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 435 440 445

PCB903030GCC.txt

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 450 455 460
 Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
 465 470 475 480
 Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
 485 490 495
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly
 500 505 510
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
 515 520 525
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
 530 535 540
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
 545 550 555 560
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
 565 570 575
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
 580 585 590
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
 595 600 605
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Arg Val
 610 615 620
 Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
 625 630 635 640
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
 645 650 655
 Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
 660 665 670
 Val Leu Val Ser Asp Gly Ser Phe Thr Leu Tyr Ser Lys Leu Thr Val
 675 680 685
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
 690 695 700
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 705 710 715 720

Pro Gly

<210> 12
 <211> 2166
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-CD3 Antibody(A15)

<400> 12
 atggacagtc aggcccaagt gctgatgctg cttctgctgt gggtagcgg cacctgcggt

60

PCB903030GCC.txt

cagggcgtgg ttagcgagga gccctccctc acagttagtc caggagggac agttacactg	120
acatgttagaa gctctactgg agccgtgact acctcaaatt acgcaaactg gggtcagcag	180
aagccaggcc aggcacctag aggcctgacg ggccggcacca ataaaagagc cccctggact	240
cccgttagat ttccggcag cctgctgggc ggcaaagccg ctctgacact ttctggcgct	300
cagcccgaag acgaggccga atactattgc gcgctgtggt atagcaatct gtgggtcttt	360
ggcgggtggca ccaaactgac cgtgttgggt cagccaaaag ctaaccctac agtaacattg	420
tttctccaa gtccgaaga attgcaggcc aataaagcaa ctctggtgtg tctgattagc	480
gatttctatc caggcgccgt gaccgtggcc tggaaagcag atggaagccc tgtgaaagct	540
ggagttgaga ctactaagcc cagcaaacag agcaacaaca agtacgcagc gtagtagctac	600
cttagcttaa ctccggagca gtggaagagc catagaagct attcttgcca ggtgaccac	660
gaggggaagta ctgtagaag aaccgttgct cctaccgaat gtccgggtgg cggtagtggc	720
ggaggcgagc agggcgccgg aagcgagggc gggggtagcg aggggtggcg cagcgagggc	780
ggcggcgagc gagggcgctc aggcgaagtg caactgtgtg aaagcgccgg cggcctcgtg	840
cagcccgggt gatcgcttaa gttgaattgt gccgccagtg ggttcacctt caacacctat	900
gcaatgaact gggtagaca agccagccgc aaaggactag aatgggtagg cagaatacga	960
tctaaataca acaattatgc tacctattac gctgactctg tcaaggatag attacaatc	1020
tcacgcgatg actctaagaa cacagcatal ctccaaatga attcattgaa aaccgaggac	1080
accgctgtgt actactgctg gagacacgga aatttcggca atagctatgt tagctggttc	1140
gcatactggg gccaaaggta cctagtactg gtgtcatcag cctccaccaa gggcccaagc	1200
gtctttccct tagcaccttc gagcaaattc actagcgggg gcaccgccgc actcggatgt	1260
ctggtgaagg attattttcc tgaacctgtg accgtaagtt ggaatagcgg cggcctgacc	1320
agcgggtgtc atacgttccc cgctgtattg caatccagcg gcctctactc actgagcagt	1380
gtggtgacag tgccatcaag cagccttgga acgcagactt atatatgtaa cgtaaaccac	1440
aagccatcta aactaaagt ggacaaaaag gtcgagccta agagctgtga taagaccac	1500
acatgcccc cctgcccagc ccccgaggcg gctggtggcc ccagtgtttt cctgtttcct	1560
cctaagccta aagacacct gatgatctca aggacaccgg aggtcacctg tgttgtgtg	1620
gacgtgtccc acgaggacc agaggtcaag ttaactggt acgtggacgg tgtggaagt	1680
cataacgcaa aaacaaagcc acgcgaggaa cagtacaatt caacatacag agtgggtgt	1740
gtgctgacag tgctgcacca ggattggctg aatgggaaag agtacaagt caagggtgtcc	1800
aataaagccc tccccgccc gattgagaag acaattagca aagctaaagg acagccaaga	1860
gaacctagag tatacacctt cctccctgc cgggatgagt tgacaaagaa tcaagtgtct	1920
ttaacctgtc tgggtaaagg ctcttaccct tcggacatcg ctgtggaatg ggaaagcaat	1980
gggcagcccg aaaacaacta taagaccact cctcccgctc tggatcaga tggctcctc	2040
acctgtata gcaaactgac tgtggataaa agcagatggc agcagggaaa cgttttcagc	2100

PCB903030GCC.txt

tgctccgtga tgcacgaggc ccttcataat cattataccc agaaaagcct tagtctgagt 2160
 cccgggc 2166

<210> 13
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15) VL

<400> 13
 Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
 1 5 10 15
 Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser
 20 25 30
 Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
 35 40 45
 Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe
 50 55 60
 Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Ala
 65 70 75 80
 Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
 85 90 95
 Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
 100 105 110

<210> 14
 <211> 330
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-CD3 Antibody(A15) VL

<400> 14
 caggccgtgg ttacgcagga gccctccctc acagtgagtc caggagggac agttacactg 60
 acatgtagaa gctctactgg agccgtgact acctcaaatt acgcaaactg gggtcagcag 120
 aagccaggcc aggcacctag aggcctgac gccggcacca ataaaagagc cccctggact 180
 cccgctagat ttccggcag cctgctgggc ggcaaagccg ctctgacact ttctggcgct 240
 cagcccgaag acgaggccga atactattgc gcgctgtggt atagcaatct gtgggtcttt 300
 ggcggtggca ccaaactgac cgtgttgggt 330

<210> 15
 <211> 125
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15) VH

PCB903030GCC.txt

<400> 15
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Thr Tyr
 20 25 30
 Ala Met Asn Trp Val Arg Gln Ala Ser Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Gly Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60
 Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
 65 70 75 80
 Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85 90 95
 Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe
 100 105 110
 Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 16
 <211> 375
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-CD3 Antibody(A15) VH

<400> 16
 gaagtgaac tgggtgaaag cggcgccggc ctctgtgcagc ccggtggatc gcttaagtta 60
 agttgtgccg ccagtgggtt caccitcaac acctatgcaa tgaactgggt tagacaagcc 120
 agcggcaaag gactagaatg ggtaggcaga atacgatcta aatacaacaa ttatgtctacc 180
 tattacgtcg actctgtcaa ggatagattt acaatctcac gcgatgactc taagaacaca 240
 gcatacctcc aaatgaattc attgaaaacc gaggacaccg ctgtgtacta ctgcgtgaga 300
 cacggaaatt tcggcaatag ctatgttagc tggttcgcat actggggcca aggtacccta 360
 gtgactgtgt catca 375

<210> 17
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-EGFR Antibody VL

<400> 17
 Asp Ile Leu Leu Thr Gln Ser Pro Val Ile Leu Ser Val Ser Pro Gly
 1 5 10 15
 Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Asn
 20 25 30

PCB903030GCC.txt

Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile
 35 40 45
 Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Ser
 65 70 75 80
 Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Asn Asn Asn Trp Pro Thr
 85 90 95
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
 100 105

<210> 18
 <211> 324
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-EGFR Antibody VL

<400> 18
 gacatcctgt tgactcaaag ccccggtata ctgagtgtat ctccgggaga aagagtatct 60
 ttcagctgca gagcaagtca gagtatttgt accaaccattc actgggtatca gcagagaacc 120
 aacgggagcc caaggctgct tattaagtac gccagtgaat ctatcagcgg catcccatca 180
 agatttagcg gttcaggtag cggcactgac ttacactct ctatcaacag cgtggagtct 240
 gaagatattg cagattacta ttgtcagcaa aataataatt ggcccaccac atttggagcc 300
 ggaacaaagc tagagctgaa gaga 324

<210> 19
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-EGFR Antibody VH

<400> 19
 Gln Val Gln Leu Lys Gln Ser Gly Pro Gly Leu Val Gln Pro Ser Gln
 1 5 10 15
 Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asn Tyr
 20 25 30
 Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu
 35 40 45
 Gly Val Ile Trp Ser Gly Gly Asn Thr Asp Tyr Asn Thr Pro Phe Thr
 50 55 60
 Ser Arg Leu Ser Ile Asn Lys Asp Asn Ser Lys Ser Gln Val Phe Phe
 65 70 75 80
 Lys Met Asn Ser Leu Gln Ser Asn Asp Thr Ala Ile Tyr Tyr Cys Ala
 85 90 95
 Arg Ala Leu Thr Tyr Tyr Asp Tyr Glu Phe Ala Tyr Trp Gly Gln Gly
 20 페이지

PCB903030GCC.txt

100 105 110

Thr Leu Val Thr Val Ser Ala
115

<210> 20
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-EGFR Antibody VH

<400> 20
 caagtgcagc ttaaacagtc tggcccagga ctggtacagc ctagccagag cctgtccatt 60
 acttgtaccg tctctggcct ttcactgacc aactacgggtg tgcactgggt gagacagagt 120
 cctggcaaag ggcttgaatg gctcgggggt atctgggtccg gtggcaatac agattacaat 180
 acacctttca catcccggtc cagtaicaat aaggataact ctaaaatctca ggtgttcttt 240
 aaaatgaact cgctgcaaag caatgacacc gccatctatt actgcgctcg cgcactgact 300
 tattacgact atgagtttgc ttattgggga caaggaactc tggtgacagt ctctgcc 357

<210> 21
 <211> 722
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A07)

<400> 21
 Met Asp Ser Gln Ala Gln Val Leu Met Leu Leu Leu Trp Val Ser
 1 5 10 15
 Gly Thr Cys Gly Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val
 20 25 30
 Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala
 35 40 45
 Val Thr Thr Ser Asn Tyr Ala Asn Trp Phe Gln Gln Lys Pro Gly Gln
 50 55 60
 Ala Pro Arg Gly Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr
 65 70 75 80
 Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr
 85 90 95
 Leu Ser Gly Ala Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu
 100 105 110
 Trp Tyr Ser Asn Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val
 115 120 125
 Leu Gly Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser
 130 135 140
 Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser
 145 150 155 160

PCB903030GCC.txt

Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser
 165 170 175
 Pro Val Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn
 180 185 190
 Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp
 195 200 205
 Lys Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr
 210 215 220
 Val Glu Lys Thr Val Ala Pro Thr Glu Cys Ser Gly Gly Gly Ser Gly
 225 230 235 240
 Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly
 245 250 255
 Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 260 265 270
 Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
 275 280 285
 Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Thr Tyr Ala Met Asn Trp
 290 295 300
 Val Arg Gln Ala Ser Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg
 305 310 315 320
 Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
 325 330 335
 Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
 340 345 350
 Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
 355 360 365
 His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly
 370 375 380
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 385 390 395 400
 Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
 405 410 415
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 420 425 430
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 435 440 445
 Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 450 455 460
 Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
 465 470 475 480
 Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
 485 490 495
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly
 500 505 510
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
 22 페이지

PCB903030GCC.txt
525

515 520 525
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
 530 535 540
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
 545 550 555 560
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
 565 570 575
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
 580 585 590
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
 595 600 605
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Arg Val
 610 615 620
 Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
 625 630 635 640
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
 645 650 655
 Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
 660 665 670
 Val Leu Val Ser Asp Gly Ser Phe Thr Leu Tyr Ser Lys Leu Thr Val
 675 680 685
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
 690 695 700
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 705 710 715 720
 Pro Gly

<210> 22
 <211> 2166
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-CD3 Antibody(A07)

<400> 22
 atggacagcc aagcccaggt gctgatgctg ctcttctt gggtagcgg tacttgcggt 60
 caggcgggtg tgaccagga accatctctc actgtatcac ctggaggaac cgtaaccctt 120
 acctgcagat ccagcaccgg ggctgtcaca acaagcaact acgctaattg gtttcagcag 180
 aaaccgggcc aagcacctag aggtttaatc ggaggcacga ataaacgggc accttggacg 240
 ccagccagat ttagtggttc acttctggga gggaaagcgg ctctgactct gagcggtgca 300
 cagccagaag atgaggcgga gtattattgt gctctgtggt acagcaactt gtgggttttt 360
 ggtggcggca caaagttgac tgtgctaggg cagccaaagg ctaatccac tgtcacactg 420
 tttcttcct cgagtgagga attgcaggcc aacaaggcta cactggtctg tctgattagc 480

PCB903030GCC.txt

gacttctacc ccggcgctgt gaccgtcgcc tggaaagccg acggttcacc cgtgaaggcc 540
 ggagtggaga ccaccaagcc gagcaagcaa agcaataaca aatatgcagc aagcagctac 600
 ttaagtctga ccccagaaca atggaagagc catcggtctt atagctgcc aagtacccac 660
 gagggtctcta ccgtggaaaa gactgttgct cccactgaat gctcgggtgg cggtagtggc 720
 ggaggcagcg agggcgccgg aagcgagggc gggggtagcg aggggtggcg cagcgagggc 780
 ggcggcagcg gaggcggtc aggcgaagtg cagctggtag agtctggcg aggcctagtt 840
 cagcctgggg gcagcctgaa gttgagctgt gctgccagcg gcttcacctt caacacatac 900
 gccatgaatt ggggtgcgaca ggcaagcggc aaaggcctgg agtgggtggg aagaattagg 960
 agcaaataca acaattacgc cacctattac gccgactcgg tcaaagatag attcaccatc 1020
 agtagagacg atagcaagaa caccgcctat ctgcagatga actcattaaa aacagaagat 1080
 acagccgtgt actactgtgt gagacacgga aactttggca atagctatgt ttcattggtc 1140
 gcctattggg gccagggaaac tctcgttact gtgtctagcg cctccacca gggcccaagc 1200
 gtctttccct tagcacctc gagcaaatcc actagcggg gcaccgccg actcggatgt 1260
 ctggtgaagg attattttcc tgaacctgtg accgtaagt ggaatagcg cgccctgacc 1320
 agcgggtgtc atacgttccc cgctgtattg caatccagcg gcctctactc actgagcagt 1380
 gtggtgacag tgccatcaag cagccttgga acgcagactt atatatgtaa cgtaaccac 1440
 aagccatcta acactaaagt ggacaaaaag gtcgagccta agagctgtga taagaccac 1500
 acatgcccc cctgccagc ccccgaggcg gctggtggcc ccagtgttt cctgtttcct 1560
 cctaagccta aagacacct gatgatctca aggacaccg aggtcacctg tgtgtggtg 1620
 gacgtgtccc acgaggacct agaggtaag ttaactggg acgtggacgg tgtggaagt 1680
 cataacgcaa aaacaaagcc acgcgaggaa cagtacaatt caacatacag agtgggtgtc 1740
 gtgctgacag tgctgcacca ggattggctg aatgggaaag agtacaagt caagggtgtc 1800
 aataaagccc tcccccccc gattgagaag acaattagca aagctaaagg acagccaaga 1860
 gaacctagag tataccctt cctccctgc cgggatgagt tgacaaagaa tcaagtgtc 1920
 ttaacctgtc tggtaaagg cttctacccc tcggacatcg ctgtggaatg ggaaagcaat 1980
 gggcagccc aaaacaacta taagaccact cctcccgctc tggatcaga tggctcctc 2040
 accctgtata gcaaactgac tgtggataaa agcagatggc agcagggaaa cgttttcagc 2100
 tgctccgtga tgcacgaggc ccttcataat cattataccc agaaaagcct tagtctgagt 2160
 cccggc 2166

<210> 23
 <211> 722
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(E15)

PCB903030GCC.txt

<400> 23
 Met Asp Ser Gln Ala Gln Val Leu Met Leu Leu Leu Trp Val Ser
 1 5 10 15
 Gly Thr Cys Gly Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val
 20 25 30
 Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala
 35 40 45
 Val Thr Thr Ser Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln
 50 55 60
 Ala Pro Arg Gly Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr
 65 70 75 80
 Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr
 85 90 95
 Leu Ser Gly Ala Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu
 100 105 110
 Trp Tyr Ser Asn Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val
 115 120 125
 Leu Gly Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser
 130 135 140
 Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser
 145 150 155 160
 Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser
 165 170 175
 Pro Val Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn
 180 185 190
 Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp
 195 200 205
 Lys Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr
 210 215 220
 Val Glu Lys Thr Val Ala Pro Thr Glu Cys Ser Gly Gly Gly Ser Gly
 225 230 235 240
 Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly
 245 250 255
 Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Glu Val Gln Leu
 260 265 270
 Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
 275 280 285
 Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Thr Tyr Ala Met Asn Trp
 290 295 300
 Val Arg Gln Ala Ser Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg
 305 310 315 320
 Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
 325 330 335
 Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
 340 345 350
 Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
 25 페이지

PCB903030GCC.txt

355 360 365
 His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly
 370 375 380
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 385 390 395 400
 Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
 405 410 415
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 420 425 430
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 435 440 445
 Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 450 455 460
 Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
 465 470 475 480
 Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
 485 490 495
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly
 500 505 510
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
 515 520 525
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
 530 535 540
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
 545 550 555 560
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
 565 570 575
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
 580 585 590
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
 595 600 605
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Arg Val
 610 615 620
 Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
 625 630 635
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
 645 650 655
 Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
 660 665 670
 Val Leu Val Ser Asp Gly Ser Phe Thr Leu Tyr Ser Lys Leu Thr Val
 675 680 685
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
 690 695 700
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 705 710 715 720

PCB903030GCC.txt

Pro Gly

<210> 24
 <211> 2166
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding Anti-CD3 Antibody(E15)

<400> 24
 atggatagcc aggcacaggt cctaattgcta ctgctgctgt gggtagcggt tacatgtggc 60
 caagcagttg taacacaaga gcctagtctg accgtctctc ccggcggcac cgtgactctt 120
 acatgcagaa gtccaccgg agccgtcaca acctcaaatt acgccaactg ggtccagcag 180
 aaaccggggc agggcccaag aggatgtatc ggcggtacta acaagcgagc accatggacc 240
 cccgccagat ttagtgccag ccttctgggc ggcaaagcag cactgacctt atcaggcgcc 300
 cagcctgagg atgaggccga gtattattgt gccctgtggt acagcaattt gtgggtattc 360
 ggcggcgggc cgaaactcac tgttctcggc cagccaaagg ccaaccctac ggtcactctt 420
 ttcccgcccta gcagtgagga actgcaggca aacaaggcaa cactggtgtg tctgattagc 480
 gacttttata ctggggcggt gactgtggcc tggaaagctg atggctcccc agttaaggcc 540
 ggcgtggaaa ccaccaagcc cagcaaacag agcaataata agtatgccgc gtcaagctac 600
 ctgagccita caccagagca atggaaaagc catagatcat acagctgtca agtaacacac 660
 gaaggctcca ccgtggagaa gacagtggcc cccactgaat gctcgggtgg cggtagtggc 720
 ggaggcagcg agggcgccgg aagcgagggc gggggtagcg aggggtggcg cagcgagggc 780
 ggcggcagcg gaggcggtc aggcgaagtc caactggtgg agtcaggagg aggcctggtt 840
 cagcccgcg gcagcctgaa gctgagctgc gcagcgagcg gattcacatt caacacctac 900
 gccatgaact gggttagaca ggctctggg aaaggattag agtgggtggc cagaattaga 960
 agtaagtaca acaattacgc tacttattac gctgactcgg tgaaagatag attcacaatc 1020
 agcagagacg acagtaagaa tactgcctat ctgcagatga acagcttgaa gactgaagac 1080
 acggctgtgt attactgcgt gagacacggc aactttggga attcttacgt gtcttggttt 1140
 gcttattggg gccagggcac ctgggtgaca gtcagtagcg cctccaccaa gggcccaagc 1200
 gtctttccct tagcacctc gagcaaatcc actagcggg gcaccgcgc actcggatgt 1260
 ctggtgaagg attattttcc tgaacctgtg accgtaagtt ggaatagcg cgccctgacc 1320
 agcgggtgtc atacgttccc cgctgtattg caatccagcg gcctctactc actgagcagt 1380
 gtggtgacag tgccatcaag cagccttggc acgcagactt atatatgtaa cgtaaacac 1440
 aagccatcta aactaaagt ggacaaaaag gtcgagccta agagctgtga taagaccac 1500
 acatgcccc cctgcccagc ccccgaggcg gctggtggcc ccagtgttt cctgtttcct 1560
 cctaagccta aagacacct gatgatctca aggacaccgg aggtcacctg tgtgtgtgtg 1620

PCB903030GCC.txt

gacgtgtccc acgaggaccc agaggtcaag tttaactggg acgtggacgg tgtggaagtt 1680
cataacgcaa aaacaaagcc acgcgaggaa cagtacaatt caacatacag agtgggtgtct 1740
gtgctgacag tgctgcacca ggattggctg aatgggaaag agtacaagtg caagggtgcc 1800
aataaagccc tccccgcccc gattgagaag acaattagca aagctaaagg acagccaaga 1860
gaacctagag tatacacccct cctccctgc cgggatgagt tgacaaagaa tcaagtgtct 1920
ttaacctgtc tggttaaagg ctctaccgcc tcggacatcg ctgtggaatg ggaaagcaat 1980
gggcagcccg aaaacaacta taagaccact cctcccgctc tggatcaga tggctccttc 2040
accctgtata gcaaactgac tgtggataaa agcagatggc agcagggaaa cgttttcagc 2100
tgctccgtga tgcacgagcg ccttcataat cattataccc agaaaagcct tagtctgagt 2160
cccgcc 2166

<210> 25
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-MSLN Antibody LCDR1

<400> 25
Arg Ala Ser Gln Asp Val Ser Thr Ala Val Ala
1 5 10

<210> 26
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-MSLN Antibody LCDR2

<400> 26
Ser Ala Ser Tyr Arg Tyr Pro
1 5

<210> 27
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-MSLN Antibody LCDR3

<400> 27
Gln Gln His Tyr Ser Thr Pro Trp
1 5

<210> 28
<211> 5
<212> PRT
<213> Artificial Sequence

PCB903030GCC.txt

<220>

<223> Anti-MSLN Antibody HCDR1

<400> 28

Ser Tyr Phe Ile Gln
1 5

<210> 29

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-MSLN Antibody HCDR2

<400> 29

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

Gly

<210> 30

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-MSLN Antibody HCDR3

<400> 30

Ser Gly Gly Tyr Gln Tyr Tyr Phe Asp Tyr
1 5 10

<210> 31

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD3 Antibody(A15) LCDR1

<400> 31

Arg Ser Ser Thr Gly Ala Val Thr Thr Ser Asn Tyr Ala Asn
1 5 10

<210> 32

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD3 Antibody(A15) LCDR2

<400> 32

Gly Thr Asn Lys Arg Ala Pro
1 5

PCB903030GCC.txt

<210> 33
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15) LCDR3

<400> 33
 Ala Leu Trp Tyr Ser Asn Leu Trp Val
 1 5

<210> 34
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15) HCDR1

<400> 34
 Thr Tyr Ala Met Asn
 1 5

<210> 35
 <211> 19
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15) HCDR2

<400> 35
 Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
 1 5 10 15

Val Lys Asp

<210> 36
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Anti-CD3 Antibody(A15) HCDR3

<400> 36
 His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr
 1 5 10

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

<220>
 <223> Anti-EGFR Antibody LCDR1

PCB903030GCC.txt

<400> 37
Gln Ser Ile Gly Thr Asn Ile His
1 5

<210> 38
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-EGFR Antibody LCDR2

<400> 38
Tyr Ala Ser Glu Ser Ile Ser
1 5

<210> 39
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-EGFR Antibody LCDR3

<400> 39
Gln Gln Asn Asn Asn Trp Pro Thr Thr
1 5

<210> 40
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-EGFR Antibody HCDR1

<400> 40
Asn Tyr Gly Val His
1 5

<210> 41
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-EGFR Antibody HCDR2

<400> 41
Val Ile Trp Ser Gly Gly Asn Thr Asp Tyr Asn Thr Pro Phe Thr Ser
1 5 10 15

<210> 42
<211> 11
<212> PRT
<213> Artificial Sequence

PCB903030GCC.txt

<220>

<223> Anti-EGFR Antibody HCDR3

<400> 42

Ala Leu Thr Tyr Tyr Asp Tyr Glu Phe Ala Tyr
1 5 10

<210> 43

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> L1, L3, L6

<400> 43

Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
1 5 10 15Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly
20 25 30

Ser Gly

<210> 44

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> L2

<400> 44

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

<210> 45

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> L4, L5, L7

<400> 45

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
1 5 10 15

<210> 46

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Antibody CL region

<400> 46

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
32 페이지

PCB903030GCC.txt

1 5 10 15
 Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
 20 25 30
 Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
 35 40 45
 Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 50 55 60
 Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
 65 70 75 80
 His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
 85 90 95
 Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 100 105

<210> 47
 <211> 98
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Antibody CH1 region

<400> 47
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1 5 10 15
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 20 25 30
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 35 40 45
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
 50 55 60
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
 65 70 75 80
 Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
 85 90 95
 Lys Val

<210> 48
 <211> 216
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Antibody Fc(CH2 + CH3) region

<400> 48
 Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
 1 5 10 15
 Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
 20 25 30

PCB903030GCC.txt

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
 35 40 45
 Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
 50 55 60
 Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
 65 70 75 80
 Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
 85 90 95
 Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
 100 105 110
 Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
 115 120 125
 Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
 130 135 140
 Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
 145 150 155 160
 Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
 165 170 175
 Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
 180 185 190
 Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
 195 200 205
 - Lys Ser Leu Ser Leu Ser Pro Gly
 210 215