Sequence Listing

<110> AKESO BIOPHARMA, INC.

<120> ANTI-CTLA4 MONOCLONAL ANTIBODY OR ANTIGEN BINDING FRAGMENT THEREOF, MEDICINAL COMPOSITION AND USE

<130> IEC150044PCT

<150> 201410377352.9
<151> 2014-08-01

<160> 34

<170> PatentIn version 3.2

<210> 1
<211> 375
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the CTLA4ECD protein

<400> 1
gcaatgcacg tggcccagcc tgctgtggta ctggccagca gccgaggcat cgccagcttt 60

gtgtgtgagt atgcatctcc aggcaaagcc actgaggtcc gggtgacagt gcttcggcag 120

gctgacagcc aggtgactga agtctgtgcg gcaacctaca tgatggggaa tgagttgacc 180

ttcctagatg attccatctg cacgggcacc tccagtggaa atcaagtgaa cctcactatc 240

caaggactga gggccatgga cacgggactc tacatctgca aggtggagct catgtaccca 300

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tgcccagatt ctgac 375

<210> 2
<211> 125
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the CTLA4ECD protein

<400> 2

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

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

Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val
35 40 45

Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr Phe Leu Asp Asp
50 55 60

Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile
65 70 75 80

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Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu
                85                  90                  95

Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln
            100                 105                 110

Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser Asp
        115                 120                 125
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<210> 3
<211> 364
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the CTLA4ECD-mFc chimeric protein

<400> 3

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

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

Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val
        35                  40                  45

Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr Phe Leu Asp Asp
    50                  55                  60

Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile
65                  70                  75                  80

Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu
                85                  90                  95

Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln
            100                 105                 110

Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser Asp Glu Asn Leu
        115                 120                 125

Tyr Phe Gln Gly Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro Pro Cys
    130                 135                 140

Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val Phe Ile Phe
145                 150                 155                 160

Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro Ile Val
                165                 170                 175
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Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val Gln Ile
            180                 185                 190

Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln Thr
        195                 200                 205

His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser Ala Leu Pro
    210                 215                 220

Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val
225                 230                 235                 240

Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser Lys Pro
                245                 250                 255

Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro Pro Glu
            260                 265                 270

Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val Thr Asp
        275                 280                 285

Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly Lys Thr
    290                 295                 300

Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser Asp Gly Ser
305                 310                 315                 320

Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn Trp Val Glu
                325                 330                 335

Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu His Asn His
            340                 345                 350

His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
        355                 360
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<210> 4
<211> 1092
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the CTLA4ECD-mFc chimeric protein

<400> 4

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gtgtgcgaat acgcttcccc aggcaaggca accgaggtcc gggtgacagt cctgagacag    120

gccgacagcc aggtgacaga agtctgcgcc gctacttata tgatgggcaa cgagctgacc    180

tttctggacg atagcatttg taccgggaca tctagtggaa accaagtgaa tctgaccatc    240

cagggcctgc gcgctatgga cacagggctg tacatttgta aagtggagct gatgtatccc    300

cctccatact atctgggaat cggcaacggg acccagatct acgtgattga tcctgaacca    360
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tgccccgact ccgatgagaa tctgtatttc cagggaccac gaggccccac aattaagcca 420

tgtccccctt gcaaatgtcc tgcaccaaac ctgctgggag gaccaagcgt gttcatcttt 480

ccacccaaga tcaaggacgt gctgatgatc tcactgagcc ccattgtgac ctgcgtggtc 540

gtggacgtga gcgaggacga tcctgatgtg cagatcagtt ggttcgtcaa caatgtggaa 600

gtccacacag ctcagactca gacccatagg gaggattaca atagtactct gcgcgtcgtg 660

tcagcactgc ccattcagca ccaggactgg atgagcggca aggagttcaa gtgcaaagtg 720

aacaacaagg atctgcccgc acctatcgag agaactattt ccaagcctaa agggtctgtg 780

agggccccac aggtgtatgt cctgcctcca cccgaggaag agatgactaa gaaacaggtg 840

acactgactt gtatggtcac cgacttcatg cccgaagata tctacgtgga gtggactaac 900

aatgggaaga ccgaactgaa ctataaaaat acagagcctg tgctggactc agatggaagc 960

tactttatgt atagcaagct gcgagtggaa aagaaaaact gggtcgagcg gaacagctac 1020

tcttgtagtg tggtccacga agggctgcat aatcaccaca ccactaaatc attctcccga 1080

actccaggca aa 1092

<210> 5
<211> 345
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the heavy chain variable domain of the monoclonal antibody 8D2

<400> 5
gaggtgaaac tggacgaaac tggcgggggg ctggtgcagc ccggacgacc tatgaagctg 60

tcatgcgtcg ccagcggctt cacctttagc gacaactgga tgaattgggt gaggcagagc 120

ccagagaagg ggctggaatg gctggctcag atccgcaaca aaccctacaa ttatgagacc 180

tactattctg acagtgtgaa gggccggttc acaatttcca gagacgattc taaaagctcc 240

gtctacctgc agatgaacaa tctgagaggc gaagatatgg ggatctacta ttgcacagca 300

cagttcgctt attggggaca gggcactctg gtcacagtct ccgcc 345

<210> 6
<211> 115
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the heavy chain variable domain of the monoclonal antibody 8D2

<400> 6

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

Pro Met Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Asp Asn
20 25 30

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

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

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

Val Tyr Leu Gln Met Asn Asn Leu Arg Gly Glu Asp Met Gly Ile Tyr
85 90 95

Tyr Cys Thr Ala Gln Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ala
115

<210> 7
<211> 318
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the light chain variable domain of the monoclonal antibody 8D2

<400> 7
gacattcaga tgacacagag tcctgcttcc ctgagtgcct cagtggggga gaccgtcaca 60

atcacttgcg gcacctctga aaacatctac ggcgggctga attggtatca gcggaagcag 120

ggcaaaagtc cccagctgct gatcttcgga gcaacaaacc tggccgacgg catgagctcc 180

cggtttagcg ggtccggatc tggcagacag tacagcctga agatttctag tctgcaccca 240

gacgatgtgg ctacttacta ttgccagaat gtcctgagga gtcccttcac ctttgggtca 300

ggaacaaagc tggagatc 318

<210> 8
<211> 106
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of the monoclonal antibody 8D2

<400> 8

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

Glu Thr Val Thr Ile Thr Cys Gly Thr Ser Glu Asn Ile Tyr Gly Gly
20 25 30

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

Phe Gly Ala Thr Asn Leu Ala Asp Gly Met Ser Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Arg Gln Tyr Ser Leu Lys Ile Ser Ser Leu His Pro
65 70 75 80

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

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

<210> 9
<211> 345
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the heavy chain variable domain of the monoclonal antibody 8D2H1L1

<400> 9
gaagtgcagc tggtcgagtc cgggggggggc ctggtgcagc caggaggatc aatgcgactg 60

agctgcgccg cttccggctt caccttcagc gacaactgga tgaattgggt caggcaggca 120

ccaggaaagg gactggagtg gctggcacag atccgcaaca aaccttacaa ctacgaaact 180

tactacagcg actccgtgaa ggggcggttc accatttcta gagacgattc taaaaacagt 240

gtgtacctgc agatgaatag cctgaagacc gaggatacag gagtctacta ttgtaccgca 300

cagtttgctt attgggggca gggcactctg gtgacagtct cttca 345

<210> 10
<211> 115
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of the monoclonal antibody 8D2H1L1

<400> 10

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

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

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

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

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

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

Tyr Cys Thr Ala Gln Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 11
<211> 321
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the light chain variable domain of the monoclonal antibody 8D2H1L1

<400> 11
gacattcaga tgactcagag cccttcaagc ctgtccgcat ctgtgggcga ccgagtcacc 60

atcacatgca gaacctccga gaacatctac ggcgggctga attggtatca gcgaaagcag 120

gggaaaagtc ccaagctgct gatctacggg gcaacaaacc tggccagcgg aatgagctcc 180

agattcagtg gatcaggcag cgggacagat tatactctga aaatttctag tctgcaccca 240

gacgatgtgg caacctacta ttgccagaat gtcctgaggt cacccttcac ctttggaagc 300

ggcacaaaac tggagatcaa g 321

<210> 12
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of the monoclonal antibody 8D2H1L1

<400> 12

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 Thr Ser Glu Asn Ile Tyr Gly Gly
20 25 30

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

Tyr Gly Ala Thr Asn Leu Ala Ser Gly Met Ser Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Lys Ile Ser Ser Leu His Pro
65 70 75 80

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

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

<210> 13
<211> 345
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the heavy chain variable domain of the monoclonal antibody 8D2H2L2, 8D2H2L15 or 8D2H2L17

<400> 13
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agctgcgccg cttccggctt caccttcagc gacaactgga tgaattgggt caggcaggca 120

ccaggaaagg gactggagtg gctggcacag atccgcaaca aaccttacaa ctacgaaact 180

tactacagcg cctccgtgaa ggggcggttc accatttcta gagacgattc taaaaacagt 240

gtgtacctgc agatgaatag cctgaagacc gaggatacag gagtctacta ttgtaccgca 300

cagtttgctt attgggggca gggcactctg gtgacagtct cttca 345

<210> 14
<211> 115
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the heavy chain variable domain of the monoclonal antibody 8D2H2L2, 8D2H2L15 or 8D2H2L17

<400> 14

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

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

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

Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr Glu Thr Tyr Tyr Ser Ala
50 55 60

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

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

Tyr Cys Thr Ala Gln Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 15
<211> 321
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the light chain variable domain of the monoclonal antibody 8D2H2L2

<400> 15
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atcacatgca gaaccagcga gaacatctac ggcggcctga actggtatca gcgaaagcca 120

ggcaagagcc ccaagctgct gatctacggg gcaaccaacc tggcctctgg agtgagctcc 180

agattcagcg gcagcggctc tgggaccgac tatactctga ccatttctag tctgcagcct 240

gaagatgtgg caacatacta ttgccagaat gtcctgaggt ccccattcac ctttggatct 300

ggcaccaagc tggagatcaa g 321

<210> 16
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of themonoclonal antibody 8D2H2L2

<400> 16

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 Thr Ser Glu Asn Ile Tyr Gly Gly
20 25 30

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

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

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

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

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

<210> 17
<211> 345
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the heavy chain variable domain of the monoclonal antibody 8D2H3L3

<400> 17
gaggtgcagc tggtcgagtc tggaggcggc ctggtgcagc ccggcgggtc actgcgactg 60

agctgcgccg cttccggctt caccttcagc gacaactgga tgaattgggt gaggcaggca 120

cccgggaagg ggctggagtg ggtcgctcag atccgcaaca aaccttacaa ttatgagaca 180

gaatacgcag cctctgtgaa ggggcggttc actattagta gagacgatag caagaacagc 240

gcctatctgc agatgaatag cctgaagacc gaagatacag ccgtctacta ttgtacagct 300

cagtttgcat actggggcca gggaactctg gtgaccgtca gctcc 345

<210> 18
<211> 115
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the heavy chain variable domain of the monoclonal antibody 8D2H3L3

<400> 18

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

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

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

Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr Glu Thr Glu Tyr Ala Ala
50 55 60

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

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

Tyr Cys Thr Ala Gln Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 19
<211> 321
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the light chain variable domain of the monoclonal antibody 8D2H3L3

<400> 19
gacattcaga tgactcagag cccttcttct ctgtccgcat ctgtgggaga ccgggtcacc 60

atcacatgca gagccagcga gaacatctac ggcggcctga actggtatca gcagaagcca 120

ggcaaagctc ccaagctgct gatctacgga gcaacctccc tggcatctgg agtgccatcc 180

cggttcagtg gatcaggcag cgggaccgac tatactctga ccattagctc cctgcagcct 240

gaagacttcg ccacatacta ttgccagaac gtgctgaggt ccccattcac ctttggatct 300

ggcaccaagc tggagatcaa g 321

<210> 20
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of the monoclonal antibody 8D2H3L3

<400> 20

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 Glu Asn Ile Tyr Gly Gly
20 25 30

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

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

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

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

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

<210> 21
<211> 321
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the light chain variable domain of the monoclonal antibody 8D2H2L15

<400> 21
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atcacctgta gaaccagcga gaacatttac ggcggactga attggtatca gaggaagccc 120

gggaaaagtc ctaagctgct gatctacgga gcaacaaacc tggcctccgg cgtgtctagt 180

cgcttcagtg gatcaggcag cgggaccgac tatacactga ctatttcaag cctgcagcca 240

gaggatgtgg ccacatacta ttgccagaat gtcctgagcc ggcaccccgg atttggctca 300

gggaccaaac tggaaattaa g 321

<210> 22
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of the monoclonal antibody 8D2H2L15

<400> 22

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 Thr Ser Glu Asn Ile Tyr Gly Gly
20 25 30

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

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

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

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

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

<210> 23
<211> 321
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the light chain variable domain of the monoclonal antibody 8D2H2L17

<400> 23

gacatccaga tgactcagtc acccagctcc ctgagtgctt cagtgggcga tcgggtcact 60

atcacctgta gaaccagcga gaacatttac ggcggactga attggtatca gaggaagccc 120

gggaaaagcc ctaagctgct gatctacgga gcaacaaacc tggcctccgg cgtgtctagt 180

cgcttcagcg gcagcggctc tggaaccgac tatacactga ctatttcaag cctgcagcca 240

gaggatgtgg ccacatacta ttgccagaat gtcctgtcct ctcgacccgg atttggcagt 300

gggaccaaac tggaaattaa g 321

<210> 24
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the light chain variable domain of the monoclonal antibody 8D2H2L17

<400> 24

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 Thr Ser Glu Asn Ile Tyr Gly Gly
20 25 30

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

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

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

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

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

<210> 25
<211> 636
<212> DNA
<213> Artificial sequence

<220>
<223> the nucleic acid sequence encoding the CTLA4 protein

<400> 25
atgggcgtcc tgctgactca gagaaccctg ctgtccctgg tgctggcact gctgtttcct 60

tcaatggctt caatggctat gcatgtggct cagccagcag tggtcctggc aagctccagg 120

gggatcgcca gtttcgtgtg cgagtacgcc tcacctggaa aggctacaga agtccgggtg 180

actgtcctga gacaggctga ctctcaggtg accgaggtct gcgccgctac atatatgatg 240

ggcaacgaac tgacctttct ggacgattcc atttgtactg gcacctctag tgggaaccaa 300

gtgaatctga ctatccaggg actgcgagca atggacaccg gactgtacat ttgcaaagtg 360

gagctgatgt atccccctcc atactatctg ggcatcggga atggaacaca gatctacgtg 420

attgatcccg aaccttgtcc agacagcgat ttcctgctgt ggattctggc agccgtgtca 480

agcggcctgt tcttttatag ctttctgctg actgccgtct ccctgtctaa gatgctgaag 540

aaacgatccc ccctgaccac aggggtggtc gtgaaaatgc cacctaccga gcccgagtgc 600

gaaaaacagt tccagccata ctttatccct atcaat 636

<210> 26
<211> 212
<212> PRT
<213> Artificial sequence

<220>
<223> the amino acid sequence of the CTLA4 protein

<400> 26

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

Leu Leu Phe Pro Ser Met Ala Ser Met Ala Met His Val Ala Gln Pro
20 25 30

Ala Val Val Leu Ala Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu
35 40 45

Tyr Ala Ser Pro Gly Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg
50 55 60

Gln Ala Asp Ser Gln Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met
65 70 75 80

Gly Asn Glu Leu Thr Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser
85 90 95

Ser Gly Asn Gln Val Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp
100 105 110

Thr Gly Leu Tyr Ile Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr
115 120 125

Tyr Leu Gly Ile Gly Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu
130 135 140

Pro Cys Pro Asp Ser Asp Phe Leu Leu Trp Ile Leu Ala Ala Val Ser
145 150 155 160

Ser Gly Leu Phe Phe Tyr Ser Phe Leu Leu Thr Ala Val Ser Leu Ser
165 170 175

Lys Met Leu Lys Lys Arg Ser Pro Leu Thr Thr Gly Val Val Val Lys
180 185 190

Met Pro Pro Thr Glu Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe
195 200 205

Ile Pro Ile Asn
210

<210> 27
<211> 8
<212> PRT
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