

SEQUENCE LISTING

<110> AKESO BIOPHARMA, INC

<120> ANTI-INTERLEUKIN-17A ANTIBODY, PHARMACEUTICAL COMPOSITION AND USE THEREOF

<130> IEC180082PCT

<150> 201810539405.0

<151> 2018-05-30

<160> 43

<170> PatentIn version 3.2

<210> 1

<211> 360

<212> DNA

<213> Artificial

<220>

<223> Nucleotide sequence of antibody 13E9 heavy chain variable region

<400> 1

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acctgcactg tcactagcta ctcatcacc agtgattatg cctggagctg gatccggcag      120
tttccaggaa tcaaactgga gtggatgggc tacataacct acagtgggtgt cactagctac      180
aaccctctc tcaaaagtcg aatctctatc actcgagaca catccaagaa ccagttcttc      240
ctacagttga attctgtgac tactgaggac acggccacat attactgtgc aagggcagac      300
tatgatagct actatactat ggactactgg ggtcaaggaa cctcagtcac cgtctcctca      360

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<210> 2

<211> 120

<212> PRT

<213> Artificial

<220>

<223> The amino acid sequence of antibody 13E9 heavy chain variable region

<400> 2

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Glu Val Lys Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
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Ser Leu Ser Leu Thr Cys Thr Val Thr Ser Tyr Ser Phe Thr Ser Asp
20 25 30

Tyr Ala Trp Ser Trp Ile Arg Gln Phe Pro Gly Ile Lys Leu Glu Trp
35 40 45

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

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

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

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

Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 3
<211> 333
<212> DNA
<213> Artificial

<220>
<223> Nucleotide sequence of antibody 13E9 light chain variable region

<400> 3
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atctcttgca gatctagtca gagccttgta cacagtaatg gaaacaccta ttacattgg 120
tacctgcaga agccaggcca gtctccaagg ctctgatct acaaagtttc caaccgattt 180
tctgggggtcc cagacagggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240
agcagagtgg aggctgagga tctgggagtt tatttctgct ctcaaagtac acatttttgg 300
acgttcggtg gaggcaccaa gctggaaata aaa 333

<210> 4
<211> 111
<212> PRT
<213> Artificial

<220>
<223> The amino acid sequence of antibody 13E9 light chain variable region

<400> 4

Asp Ile Gln Leu Thr Gln Ser 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 Leu Val His Ser
20 25 30

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

Pro Arg Leu Leu Ile Tyr Lys 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 Phe Cys Ser Gln Ser
85 90 95

Thr His Phe Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

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

<220>
<223> Nucleotide sequence of antibody 13E9H1L1 heavy chain variable region

<400> 5

gatgtgcagc tgcaggaaag cggaccagga ctggtgaagc ctagccagac cctgagcctg 60

acttgcacccg tgtccagcta cagcttcacc agcgactacg cttggtcttg gatcagacag 120
 ttcccaggaa ttggcctcga gtggatgggc tacatcacct acagcggcgt gaccagctac 180
 aaccccagcc tgaagagcag gatcaccatc agccgggaca ccagcaagaa ccagttcttc 240
 ctgcagctga acagcgtgac agcagccgat accgcagtgt actattgcgc cagggccgac 300
 tacgacagct actacaccat ggactattgg ggccagggaa ccagcgtgac agtgtctagc 360

<210> 6

<211> 120

<212> PRT

<213> Artificial

<220>

<223> The amino acid sequence of antibody 13E9H1L1 heavy chain variable region

<400> 6

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Ser Tyr Ser Phe Thr Ser Asp
 20 25 30

Tyr Ala Trp Ser Trp Ile Arg Gln Phe Pro Gly Ile Gly Leu Glu Trp
 35 40 45

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

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

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

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

Gly Thr Ser Val Thr Val Ser Ser

115

120

<210> 7
 <211> 333
 <212> DNA
 <213> Artificial

<220>
 <223> Nucleotide sequence of antibody 13E9H1L1 light chain variable region

<400> 7
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 atctcttgca gaagcagcca gagcctggtg cacagcaacg gcaacaccta cctgcattgg 120
 tacctgcaga agccaggcca gtctcctaga ctgctgatct acaagggtgtc caaccggttc 180
 agcggcgtgc cagatagatt cagcgggaagc ggaagcggca ccgacttcac cctgaagatc 240
 agcagagtgg aggccgagga tctgggagtg tactttctgca gccagagcac ccacttttgg 300
 accttcggcg gaggcaccaa gctggagatc aag 333

<210> 8
 <211> 111
 <212> PRT
 <213> Artificial

<220>
 <223> The amino acid sequence of antibody 13E9H1L1 light chain variable region

<400> 8

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

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

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

Pro Arg Leu Leu Ile Tyr Lys 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 Phe Cys Ser Gln Ser
85 90 95

Thr His Phe Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 9

<211> 360

<212> DNA

<213> Artificial

<220>

<223> Nucleotide sequence of antibody 13E9H2L2 heavy chain variable region

<400> 9

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acttgcaccg tgtccagcta cagcttcacc agcgactacg cttggtcttg gatcagacag 120

ccaccaggaa agggactcga gtggatcggc tacatcacct acagcggcgt gaccagctac 180

aaccccagcc tgaagagcag gatcaccatc agccgggaca ccagcaagaa ccagttcttc 240

ctgcagctgt ctagcgtgac agcagccgat accgcagtgt actattgcgc cagggccgac 300

tacgacagct actacaccat ggactattgg ggccagggaa ccagcgtgac agtgtctagc 360

<210> 10

<211> 120

<212> PRT

<213> Artificial

<220>

<223> The amino acid sequence of antibody 13E9H2L2 heavy chain variable region

<400> 10

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Ser Tyr Ser Phe Thr Ser Asp

	20		25		30	
Tyr	Ala	Trp	Ser	Trp	Ile	Arg
	35					Gln
						40
						Pro
						Pro
						Gly
						Lys
						45
						Gly
						Leu
						Glu
						Trp

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

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

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

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

Gly	Thr	Ser	Val	Thr	Val	Ser
	115					120
						Ser

<210> 11
 <211> 333
 <212> DNA
 <213> Artificial

<220>
 <223> Nucleotide sequence of antibody 13E9H2L2 light chain variable region

<400> 11	
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tacctgcaga agccaggcca gtctcctaga ctgctgatct acaaggtgtc caaccggttc	180
agcggcgtgc cagatagatt cagcgggaagc ggaagcggca ccgacttcac cctgaagatc	240
agcagagtgg aggccgagga tctgggagtg tactactgca gccagagcac ccacttttgg	300
accttcggcg gaggcaccaa gctggagatc aag	333

<210> 12

<211> 111
<212> PRT
<213> Artificial

<220>

<223> The amino acid sequence of antibody 13E9H2L2 light chain variable region

<400> 12

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30

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

Pro Arg Leu Leu Ile Tyr Lys 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 Ser Gln Ser
85 90 95

Thr His Phe Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 13
<211> 360
<212> DNA
<213> Artificial

<220>

<223> Nucleotide sequence of antibody 13E9H3L2 heavy chain variable region

<400> 13

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acttgaccg tgtccagcta cagcttcacc agcgactacg cttggtcttg gatcagacag 120

ccaccaggaa agggactcga gtggatcggc tacatcacct acagcggcgt gaccagctac 180
aaccctagcc tgaagagccg cgtgaccatt agcgtggaca ccagcaagaa ccagttctcc 240
ctgaagctga gcagcgtgac agccgccgat acagcagtgt actattgcgc ccgggccgat 300
tacgacagct actacaccat ggactattgg ggccagggaa ccagcgtgac agtgtctagc 360

<210> 14
<211> 120
<212> PRT
<213> Artificial

<220>
<223> The amino acid sequence of antibody 13E9H3L2 heavy chain variable region

<400> 14

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Ser Tyr Ser Phe Thr Ser Asp
20 25 30

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

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

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

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

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

Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 15
<211> 351
<212> DNA
<213> Artificial

<220>
<223> Nucleotide sequence of antibody 2G2 heavy chain variable region

<400> 15
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tcatgcaagg attttgattc agaagtcttc cctattgctg atatgagttg ggtaggcag 120
aagcctgggc atggatttga atggattgga gacatactcc caagttttgg tagaacaatc 180
tatggagaga agtttgagga caaagccaaa gtggatgcag acacagtgtc caacacagcc 240
tacttgaac tcaacagtct gacatctgag gactctgcta tctactactg tgcaaggggt 300
aactacgggt ttgcttactg gggccaaggg actctgggtca ctgtctctgc a 351

<210> 16
<211> 117
<212> PRT
<213> Artificial

<220>
<223> The amino acid sequence of antibody 2G2 heavy chain variable region

<400> 16

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

Ser Val Lys Leu Ser Cys Lys Asp Phe Asp Ser Glu Val Phe Pro Ile
20 25 30

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

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

Phe Glu Asp Lys Ala Lys Val Asp Ala Asp Thr Val Ser Asn Thr Ala

65		70		75		80									
Tyr	Leu	Glu	Leu	Asn	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Ile	Tyr	Tyr
				85					90					95	

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

Val	Thr	Val	Ser	Ala
				115

<210> 17
 <211> 336
 <212> DNA
 <213> Artificial

<220>
 <223> Nucleotide sequence of antibody 2G2 light chain variable region

<400> 17	
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atctcttgca agccaagtca gagcctctta aatagtgatg gaaagacata tttgaattgg	120
ttgtttgcaga ggccaggcca gtctccaaag cgcctaattct atctggtgtc taaactggac	180
tctggagtcc ctgacaggtt cactggcagt ggatcaggga cagatttcac actgaaaatc	240
agcagagtgg aggctgagga ttggggagtt tattattgct ggcaagggtc acattttcct	300
cagacgttcg gtggaggcac aaagttggaa ataaaa	336

<210> 18
 <211> 112
 <212> PRT
 <213> Artificial

<220>
 <223> The amino acid sequence of antibody 2G2 light chain variable region

<400> 18

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

Gln Pro Ala Ser Ile Ser Cys Lys Pro Ser Gln Ser Leu Leu Asn Ser
 20 25 30

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

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

Asp Arg Phe Thr 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 Trp Gln Gly
 85 90 95

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

<210> 19
 <211> 348
 <212> DNA
 <213> Artificial

<220>
 <223> Nucleotide sequence of antibody 2G2H1L1 heavy chain variable region

<400> 19
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 tgcaaggact tcgacagcga ggtgttcccc atcgccgata tgtcttgggt cgcacaggct 120
 ccaggccagg gattcgagtg gatcggtgac attctgcca gcttcggaag aaccaactac 180
 gcccaagaagt tcgagggcaa ggccaagggtg gacgcagaca agagcaccaa caccgcctac 240
 ctggagctga acagcctgag aagcgaggac accgccatct actattgcgc caggggcaac 300
 tacggattcg cctattgggg ccagggaaca ctggtgacag tgtccgcc 348

<210> 20
 <211> 116
 <212> PRT

<213> Artificial

<220>

<223> The amino acid sequence of antibody 2G2H1L1 heavy chain variable region

<400> 20

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

Val Lys Leu Ser Cys Lys Asp Phe Asp Ser Glu Val Phe Pro Ile Ala
20 25 30

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

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

Glu Gly Lys Ala Lys Val Asp Ala Asp Lys Ser Thr Asn Thr Ala Tyr
65 70 75 80

Leu Glu Leu Asn Ser Leu Arg Ser Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

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

Thr Val Ser Ala
115

<210> 21

<211> 336

<212> DNA

<213> Artificial

<220>

<223> Nucleotide sequence of antibody 2G2H1L1 light chain variable region

<400> 21

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atcagctgca gaagcagcca gagcctgctg aacagcgacg gcaagaccta cctgaattgg 120
 ctgctgcaga gaccaggcca gtctcctaga aggctgatct acctggtgtc caagctggac 180
 agcggcgtgc cagatagatt cagcggaagc ggaagcggca ccgacttcac cctgaagatc 240
 agcagagtgg aggccgagga tctgggagtg tactactgtt ggcagggcag ccacttcctt 300
 cagacattcg gcggcggcac aaagctggag atcaag 336

<210> 22

<211> 112

<212> PRT

<213> Artificial

<220>

<223> The amino acid sequence of antibody 2G2H1L1 light chain variable region

<400> 22

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asn Ser
 20 25 30

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

Pro Arg Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp 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 Trp Gln Gly
 85 90 95

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

<210> 23

<211> 348
<212> DNA
<213> Artificial

<220>

<223> Nucleotide sequence of antibody 2G2H2L2 heavy chain variable region

<400> 23

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ccaggccagg gattcgagtg gatcggtgac attctgccca gcttcgggag aaccaattac      180
gcccagaagt tccagggcag agtgaccgtg accgcagaca agagcaccaa caccgcctac      240
ctggagctga acagcctgag gagcgaggat accgccgtgt actattgcgc caggggcaac      300
tacggcttcg cctattgggg acaggaaca ctggtgacag tgtccgcc      348
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<210> 24
<211> 116
<212> PRT
<213> Artificial

<220>

<223> The amino acid sequence of antibody 2G2H2L2 heavy chain variable region

<400> 24

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

```
Val Lys Leu Ser Cys Lys Asp Phe Asp Ser Glu Val Phe Pro Ile Ala
20          25          30
```

```
Asp Met Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Phe Glu Trp Ile
35          40          45
```

```
Gly Asp Ile Leu Pro Ser Phe Gly Arg Thr Asn Tyr Ala Gln Lys Phe
50          55          60
```

```
Gln Gly Arg Val Thr Val Thr Ala Asp Lys Ser Thr Asn Thr Ala Tyr
65          70          75          80
```

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

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

Thr Val Ser Ala
115

<210> 25
<211> 336
<212> DNA
<213> Artificial

<220>
<223> Nucleotide sequence of antibody 2G2H2L2 light chain variable region

<400> 25
gatgtcgtga tgaccagac ccctctgtct ctgagcgtga cactgggaca gccagctagc 60
atcagctgca gaagcagcca gagcctgctg aacagcgacg gcaagaccta cctgaattgg 120
ctgctgcaga gaccaggcca gtctcctaga aggctgatct acctggtgtc caacctggac 180
agcggcgtgc cagatagatt cagcggaagc ggaagcggca ccgacttcac cctgaagatc 240
agcagagtgg aagccgagga cgtgggagtg tactactgtt ggcagggcag ccacttcctt 300
cagacattcg gcggcggcac aaagctggag atcaag 336

<210> 26
<211> 112
<212> PRT
<213> Artificial

<220>
<223> The amino acid sequence of antibody 2G2H2L2 light chain variable region

<400> 26

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asn Ser

20

25

30

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

Pro Arg Arg Leu Ile Tyr Leu Val Ser Asn Leu Asp 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 Val Gly Val Tyr Tyr Cys Trp Gln Gly
 85 90 95

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

<210> 27

<211> 348

<212> DNA

<213> Artificial

<220>

<223> Nucleotide sequence of antibody 2G2H3L3 heavy chain variable region

<400> 27

gtgcagctgg tgcagagcgg agcagaagtg aagaagccag gcagcagcgt gaaggtgtct 60

tgcaaggact tcagcagcga ggtgttcccc atcgccgata tgtcttgggt cgcacaggct 120

ccaggccagg gactggagtg gatcggtgac attctgcca gcttcgggag aaccaattac 180

gcccagaagt tccagggcag agtgaccgtg accgcagaca agagcaccaa caccgcctac 240

ctggagctgt ctagcctgag aagcgaggac accgccgtgt actattgcgc caggggcaac 300

tacggcttcg cctattgggg acagggaaca ctggtgacag tgtccgcc 348

<210> 28

<211> 116

<212> PRT

<213> Artificial

<220>

<223> The amino acid sequence of antibody 2G2H3L3 heavy chain variable region

<400> 28

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

Val Lys Val Ser Cys Lys Asp Phe Ser Ser Glu Val Phe Pro Ile Ala
20 25 30

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

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

Gln Gly Arg Val Thr Val Thr Ala Asp Lys Ser Thr Asn Thr Ala Tyr
65 70 75 80

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

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

Thr Val Ser Ala
115

<210> 29

<211> 336

<212> DNA

<213> Artificial

<220>

<223> Nucleotide sequence of antibody 2G2H3L3 light chain variable region

<400> 29

gatgtcgtga tgaccagac ccctctgtct ctgagcgtga cactgggaca gccagctagc 60

atcagctgca gaagcagcca gagcctgctg aacagcgacg gcaagaccta cctgaattgg 120

ttcctgcaga gaccaggcca gtctcctaga aggctgatct acctggtgtc caacctggac 180
agcggcgtgc cagatagatt cagcggaagc ggaagcggca ccgacttcac cctgaagatc 240
agcagagtgg aagccgagga cgtgggagtg tactactgtt ggcagggcag ccacttcctt 300
cagacattcg gcggcggcac aaagctggag atcaag 336

<210> 30
<211> 112
<212> PRT
<213> Artificial

<220>
<223> The amino acid sequence of antibody 2G2H3L3 light chain variable region

<400> 30

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asn Ser
20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Gln Ser
35 40 45

Pro Arg Arg Leu Ile Tyr Leu Val Ser Asn Leu Asp 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 Val Gly Val Tyr Tyr Cys Trp Gln Gly
85 90 95

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

<210> 31
<211> 9
<212> PRT

<213> Artificial

<220>

<223> HCDR1 of Antibodies 13E9, 13E9H1L1, 13E9H2L2 or 13E9H3L2

<400> 31

Ser Tyr Ser Phe Thr Ser Asp Tyr Ala
1 5

<210> 32

<211> 7

<212> PRT

<213> Artificial

<220>

<223> HCDR2 of Antibodies 13E9, 13E9H1L1, 13E9H2L2 or 13E9H3L2

<400> 32

Ile Thr Tyr Ser Gly Val Thr
1 5

<210> 33

<211> 13

<212> PRT

<213> Artificial

<220>

<223> HCDR3 of Antibodies 13E9, 13E9H1L1, 13E9H2L2 or 13E9H3L2

<400> 33

Ala Arg Ala Asp Tyr Asp Ser Tyr Tyr Thr Met Asp Tyr
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<210> 34

<211> 11

<212> PRT

<213> Artificial

<220>

<223> LCDR3 of Antibodies 13E9, 13E9H1L1, 13E9H2L2 or 13E9H3L2

<400> 34

Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr

<220>

<223> HCDR2 of 2G2, 2G2H1L1, 2G2H2L2 or 2G2H3L3

<400> 38

Ile Leu Pro Ser Phe Gly Arg Thr

1 5

<210> 39

<211> 9

<212> PRT

<213> Artificial

<220>

<223> HCDR3 of 2G2, 2G2H1L1, 2G2H2L2 or 2G2H3L3

<400> 39

Ala Arg Gly Asn Tyr Gly Phe Ala Tyr

1 5

<210> 40

<211> 11

<212> PRT

<213> Artificial

<220>

<223> LCDR1 of 2G2, 2G2H1L1, 2G2H2L2 or 2G2H3L3

<400> 40

Gln Ser Leu Leu Asn Ser Asp Gly Lys Thr Tyr

1 5 10

<210> 41

<211> 3

<212> PRT

<213> Artificial

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<223> LCDR2 of 2G2, 2G2H1L1, 2G2H2L2 or 2G2H3L3

<400> 41

Leu Val Ser

1

<210> 42
 <211> 9
 <212> PRT
 <213> Artificial

 <220>
 <223> LCDR3 of 2G2, 2G2H1L1, 2G2H2L2 or 2G2H3L3

 <400> 42

Trp Gln Gly Ser His Phe Pro Gln Thr
 1 5

<210> 43
 <211> 155
 <212> PRT
 <213> Homo sapiens

 <400> 43

Met Thr Pro Gly Lys Thr Ser Leu Val Ser Leu Leu Leu Leu Leu Ser
 1 5 10 15

Leu Glu Ala Ile Val Lys Ala Gly Ile Thr Ile Pro Arg Asn Pro Gly
 20 25 30

Cys Pro Asn Ser Glu Asp Lys Asn Phe Pro Arg Thr Val Met Val Asn
 35 40 45

Leu Asn Ile His Asn Arg Asn Thr Asn Thr Asn Pro Lys Arg Ser Ser
 50 55 60

Asp Tyr Tyr Asn Arg Ser Thr Ser Pro Trp Asn Leu His Arg Asn Glu
 65 70 75 80

Asp Pro Glu Arg Tyr Pro Ser Val Ile Trp Glu Ala Lys Cys Arg His
 85 90 95

Leu Gly Cys Ile Asn Ala Asp Gly Asn Val Asp Tyr His Met Asn Ser
 100 105 110

Val Pro Ile Gln Gln Glu Ile Leu Val Leu Arg Arg Glu Pro Pro His
115 120 125

Cys Pro Asn Ser Phe Arg Leu Glu Lys Ile Leu Val Ser Val Gly Cys
130 135 140

Thr Cys Val Thr Pro Ile Val His His Val Ala
145 150 155