

1
SEQUENCE LISTING

<110> Fourth Military Medical University

<120> HUMANIZED ANTI-BASIGIN ANTIBODIES AND THE USE THEREOF

<130> 022079-8006W001

<160> 57

<170> PatentIn version 3.5

<210> 1

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of humanized heavy chain variable region of humanized anti-BASIGIN antibody or antigen binding fragment with variations

<220>

<221> misc_feature

<222> (5)..(5)

<223> Xaa can be any naturally occurring amino acid

<220>

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<222> (23)..(23)

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<222> (89)..(89)

<223> Xaa can be any naturally occurring amino acid

<220>

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<222> (94)..(94)

<223> Xaa can be any naturally occurring amino acid

<400> 1

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

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

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

Xaa Glu Ile Arg Leu Lys Ser Asn Asn Tyr Ala Thr His Tyr Ala Glu
 50 55 60

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

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

Tyr Cys Thr Ser Tyr Asp Tyr Glu Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ala
 115

<210> 2

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of humanized light chain variable region of
 humanized anti-BASIGIN antibody or antigen binding fragment with
 variations

<220>

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<222> (9)..(10)

<223> Xaa can be any naturally occurring amino acid

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<222> (13)..(13)

<223> Xaa can be any naturally occurring amino acid

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<222> (21)..(22)

<223> Xaa can be any naturally occurring amino acid

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<222> (42)..(43)

<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<222> (80)..(81)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc_feature

<222> (83)..(83)

<223> Xaa can be any naturally occurring amino acid

<400> 2

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

Asp	Arg	Val	Thr	Xaa	Xaa	Cys	Lys	Ala	Ser	Glu	Asn	Val	Gly	Thr	Tyr
		20						25					30		

Val	Ser	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Xaa	Xaa	Pro	Lys	Leu	Leu	Ile
		35					40					45			

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

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

Xaa Asp Xaa Ala Thr Tyr Tyr Cys Gly Gln Ser Tyr Ser Tyr Pro Phe
 85 90 95

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

<210> 3

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of heavy chain variable region (VH) of
 humanized antibody HP6H8-1

<400> 3

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 Asn Phe
 20 25 30

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

Ser Glu Ile Arg Leu Lys Ser Asn Asn Tyr Ala Thr His Tyr Ala Glu
 50 55 60

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

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

Tyr Cys Thr Ser Tyr Asp Tyr Glu Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ala
 115

<210> 4

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

<220>

<223> Nucleic acid sequence of heavy chain variable region (VH) of humanized antibody HP6H8-1

<400> 4
 gaagtgcagc ttgtggagtc tggaggaggc ttggtgcaac ctggaggatc cctgaggctc 60
 tcctgtgccg cctctggatt cactttcagt aacttctgga tgaactgggt ccgccaggct 120
 ccagggaagg ggcttgagtg ggtttccgaa attagattga aatctaataa ttatgcaaca 180
 cattatgcgg agtctgtgaa agggagggtc accatctcaa gagatgattc caaaaacacc 240
 ctgtacctgc agatgaactc cttaaagact gaagacactg ccgtgtatta ctgtaccagc 300
 tatgattacg aatactgggg ccaagggact ctggtcactg tctctgca 348

<210> 5
 <211> 116
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Amino acid sequence of heavy chain variable region (VH) of humanized antibody HP6H8-2

<400> 5

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 Ser Asn Phe
 20 25 30

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

Ala Glu Ile Arg Leu Lys Ser Asn Asn Tyr Ala Thr His Tyr Ala Glu
 50 55 60

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

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

Tyr Cys Thr Ser Tyr Asp Tyr Glu Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ala
115

<210> 6
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Nucleic acid sequence of heavy chain variable region (VH) of humanized antibody HP6H8-1

<400> 6
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tcctgtgccg cctctggatt cactttcagt aacttctgga tgaactgggt ccgccaggct 120
ccaggggaagg ggcttgagtg ggttgccgaa attagattga aatctaataa ttatgcaaca 180
cattatgcgg agtctgtgaa agggagggttc accatctcaa gagatgattc caaaaacacc 240
ctgtacctgc aatgaactc cttaaggact gaagacactg ccgtgtatta ctgtaccagc 300
tatgattacg aatactgggg ccaagggact ctggtcactg tctctgca 348

<210> 7
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Amino acid sequence of heavy chain variable region (VH) of humanized antibody HP6H8-3

<400> 7

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 Ser Asn Phe
20 25 30

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

Ala Glu Ile Arg Leu Lys Ser Asn Asn Tyr Ala Thr His Tyr Ala Glu
 50 55 60

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

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

Tyr Cys Thr Ser Tyr Asp Tyr Glu Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ala
 115

<210> 8

<211> 348

<212> PRT

<213> Artificial Sequence

<220>

<223> Nucleic acid sequence of heavy chain variable region (VH) of
 humanized antibody HP6H8-3

<400> 8

Gly Ala Ala Gly Thr Gly Cys Ala Gly Cys Thr Thr Gly Thr Gly Gly
 1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Cys Thr Thr
 20 25 30

Gly Gly Thr Gly Cys Ala Ala Cys Cys Thr Gly Gly Ala Gly Gly Ala
 35 40 45

Thr Cys Cys Cys Thr Gly Ala Ala Gly Cys Thr Cys Thr Cys Cys Thr
 50 55 60

Gly Thr Gly Cys Cys Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr

65				70				75				80			
Cys	Ala	Cys	Thr	Thr	Thr	Cys	Ala	Gly	Thr	Ala	Ala	Cys	Thr	Thr	Cys
				85				90				95			
Thr	Gly	Gly	Ala	Thr	Gly	Ala	Ala	Cys	Thr	Gly	Gly	Gly	Thr	Cys	Cys
				100				105				110			
Gly	Cys	Cys	Ala	Gly	Gly	Cys	Thr	Cys	Cys	Ala	Gly	Gly	Gly	Ala	Ala
				115				120				125			
Gly	Gly	Gly	Gly	Cys	Thr	Thr	Gly	Ala	Gly	Thr	Gly	Gly	Gly	Thr	Thr
				130				135				140			
Gly	Cys	Cys	Gly	Ala	Ala	Ala	Thr	Thr	Ala	Gly	Ala	Thr	Thr	Gly	Ala
				145				150				155			
Ala	Ala	Thr	Cys	Thr	Ala	Ala	Thr	Ala	Ala	Thr	Thr	Ala	Thr	Gly	Cys
				165				170				175			
Ala	Ala	Cys	Ala	Cys	Ala	Thr	Thr	Ala	Thr	Gly	Cys	Gly	Gly	Ala	Gly
				180				185				190			
Thr	Cys	Thr	Gly	Thr	Gly	Ala	Ala	Ala	Gly	Gly	Gly	Ala	Gly	Gly	Thr
				195				200				205			
Thr	Cys	Ala	Cys	Cys	Ala	Thr	Cys	Thr	Cys	Ala	Ala	Gly	Ala	Gly	Ala
				210				215				220			
Thr	Gly	Ala	Thr	Thr	Cys	Cys	Ala	Ala	Ala	Ala	Ala	Cys	Ala	Cys	Cys
				225				230				235			
Cys	Thr	Gly	Thr	Ala	Cys	Cys	Thr	Gly	Cys	Ala	Gly	Ala	Thr	Gly	Ala
				245				250				255			
Ala	Cys	Thr	Cys	Cys	Thr	Thr	Ala	Ala	Ala	Gly	Ala	Cys	Thr	Gly	Ala
				260				265				270			
Ala	Gly	Ala	Cys	Ala	Cys	Thr	Gly	Cys	Cys	Gly	Thr	Gly	Thr	Ala	Thr
				275				280				285			

Thr Ala Cys Thr Gly Thr Ala Cys Cys Ala Gly Cys Thr Ala Thr Gly
 290 295 300

Ala Thr Thr Ala Cys Gly Ala Ala Thr Ala Cys Thr Gly Gly Gly Gly
 305 310 315 320

Cys Cys Ala Ala Gly Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys
 325 330 335

Ala Cys Thr Gly Thr Cys Thr Cys Thr Gly Cys Ala
 340 345

<210> 9
 <211> 10
 <212> PRT
 <213> Mus musculus

<220>
 <221> HCDR1
 <222> (1)..(10)

<400> 9

Gly Phe Thr Phe Ser Asn Phe Trp Met Asn
 1 5 10

<210> 10
 <211> 19
 <212> PRT
 <213> Mus musculus

<220>
 <221> HCDR2
 <222> (1)..(19)

<400> 10

Glu Ile Arg Leu Lys Ser Asn Asn Tyr Ala Thr His Tyr Ala Glu Ser
 1 5 10 15

Val Lys Gly

<210> 11
 <211> 5
 <212> PRT
 <213> Mus musculus

<220>
 <221> HCDR3
 <222> (1)..(5)

<400> 11

Tyr Asp Tyr Glu Tyr
 1 5

<210> 12
 <211> 25
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> (5)..(5)
 <223> X= any amino acid

<220>
 <221> misc_feature
 <222> (23)..(23)
 <223> Xaa can be any naturally occurring amino acid

<400> 12

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

Ser Leu Arg Leu Ser Cys Xaa Ala Ser
 20 25

<210> 13
 <211> 14
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Human heavy chain FR2
 <222> (1)..(14)

<400> 13

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Xaa
1 5 10

<210> 14

<211> 32

<212> PRT

<213> Homo sapiens

<220>

<221> Human heavy chain FR3

<222> (1)..(32)

<400> 14

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Xaa Xaa Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Xaa Thr Glu Asp Thr Xaa Val Tyr Tyr Cys Thr Ser
20 25 30

<210> 15

<211> 11

<212> PRT

<213> Homo sapiens

<220>

<221> Human heavy chain FR4

<222> (1)..(11)

<400> 15

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
1 5 10

<210> 16

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of light chain variable region (VL) of
humanized antibody HP6H8-1

<400> 16

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

Asp Arg Val Thr Leu Ser Cys Lys Ala Ser Glu Asn Val Gly Thr Tyr
20 25 30

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

Tyr Gly Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg Phe Thr 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 Gly Gln Ser Tyr Ser Tyr Pro Phe
85 90 95

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

<210> 17
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Nucleic acid sequence of light chain variable region (VL) of
humanized antibody HP6H8-1

<400> 17
gacattcaga tgacccaatc tccctccacc ctgtccgcct cagtgggcga cagggtcacc 60
ctctcctgca aggccagtga gaatgtgggt acttatgtat cctggtatca acagaaacca 120
ggcaaggccc ctaaactgct gatatacggg gcatccaacc ggtacactgg ggtcccctcc 180
cgcttcaccg gcagtggatc tggcacagat ttactctga ccatcagcag tctgcagccc 240
gaggacttcg caacctatta ctgtggacag agttacagct atccattcac gttcggctcg 300
gggacaaagt tggaataaaa a 321

<210> 18
<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of light chain variable region (VL) of humanized antibody HP6H8-2

<400> 18

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

Asp Arg Val Thr Ile Ser Cys Lys Ala Ser Glu Asn Val Gly Thr Tyr
 20 25 30

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

Tyr Gly Ala Ser Asn Arg Tyr Thr 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

Asp Asp Phe Ala Thr Tyr Tyr Cys Gly Gln Ser Tyr Ser Tyr Pro Phe
 85 90 95

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

<210> 19

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleic acid sequence of light chain variable region (VL) of humanized antibody HP6H8-2

<400> 19

gacattcaga tgacccaatc tccgcctcc ctgtccgcct cagtgggcga cagggtcacc 60

atctcctgca aggccagtga gaatgtgggt acttatgtat cctggatatca acagaaacca 120

ggccagaccc ctaaactgct gatatacggg gcatccaacc ggtacactgg ggtcccctcc 180

14

cgcttctccg gcagtggatc tggcacagat ttcactctga ccatcagcag tctgcagccc 240
gacgacttcg caacctatta ctgtggacag agttacagct atccattcac gttcggctcg 300
gggacaaaagt tggaaataaa a 321

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

<220>
<223> Amino acid sequence of light chain variable region (VL) of
humanized antibody HP6H8-3

<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 Leu Thr Cys Lys Ala Ser Glu Asn Val Gly Thr Tyr
20 25 30

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

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

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

Asp Asp Phe Ala Thr Tyr Tyr Cys Gly Gln Ser Tyr Ser Tyr 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> Nucleic acid sequence of light chain variable region (VL) of

humanized antibody HP6H8-3

<400> 21
 gacattcaga tgacccaatc tccctcctcc ctgtccgcct cagtgggcga cagggtcacc 60
 ctcacctgca aggccagtga gaatgtgggt acttatgtat cctggatatca acagaaacca 120
 ggccaggccc ctaaactgct gatatacggg gcatccaacc ggtacactgg ggtcccctcc 180
 cgcttcaccg gcagtggatc tggcacagat ttcactctga ccatcagcag tctgcagccc 240
 gacgacttcg caacctatta ctgtggacag agttacagct atccattcac gttcggctcg 300
 gggacaaagt tggaaataaa a 321

<210> 22
 <211> 11
 <212> PRT
 <213> Mus musculus

<220>
 <221> LCDR1
 <222> (1)..(11)

<400> 22

Lys Ala Ser Glu Asn Val Gly Thr Tyr Val Ser
 1 5 10

<210> 23
 <211> 7
 <212> PRT
 <213> Mus musculus

<220>
 <221> LCDR2
 <222> (1)..(7)

<400> 23

Gly Ala Ser Asn Arg Tyr Thr
 1 5

<210> 24
 <211> 9
 <212> PRT
 <213> Mus musculus

<220>
 <221> LCDR3
 <222> (1)..(9)

<400> 24

Gly Gln Ser Tyr Ser Tyr Pro Phe Thr
 1 5

<210> 25
 <211> 23
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Human light chain FR1
 <222> (1)..(23)

<400> 25

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

Asp Arg Val Thr Xaa Xaa Cys
 20

<210> 26
 <211> 15
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Human light chain FR2
 <222> (1)..(15)

<400> 26

Trp Tyr Gln Gln Lys Pro Gly Xaa Xaa Pro Lys Leu Leu Ile Tyr
 1 5 10 15

<210> 27
 <211> 32
 <212> PRT
 <213> Homo sapiens

<220>

<221> Human light chain FR3

<222> (1)..(32)

<400> 27

Gly	Val	Pro	Xaa	Arg	Phe	Thr	Gly	Xaa	Gly	Ser	Gly	Thr	Asp	Phe	Thr
1				5					10					15	

Leu	Thr	Ile	Ser	Ser	Leu	Gln	Xaa	Xaa	Asp	Xaa	Ala	Thr	Tyr	Tyr	Cys
			20					25					30		

<210> 28

<211> 10

<212> PRT

<213> Homo sapiens

<220>

<221> Human light chain FR4

<222> (1)..(10)

<400> 28

Phe	Gly	Ser	Gly	Thr	Lys	Leu	Glu	Ile	Lys
1				5					10

<210> 29

<211> 107

<212> PRT

<213> Mus musculus

<220>

<221> Amino acid sequence of the light chain variable region of 6H8

<222> (1)..(107)

<400> 29

Asn	Ile	Val	Met	Thr	Gln	Ser	Pro	Lys	Ser	Met	Ser	Met	Ser	Val	Gly
1				5					10					15	

Glu	Arg	Val	Thr	Leu	Ser	Cys	Lys	Ala	Ser	Glu	Asn	Val	Gly	Thr	Tyr
			20					25					30		

Val	Ser	Trp	Tyr	Gln	Gln	Lys	Pro	Glu	Gln	Ser	Pro	Lys	Leu	Leu	Ile
		35					40					45			

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

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

Glu Asp Leu Ala Asp Tyr His Cys Gly Gln Ser Tyr Ser Tyr Pro Phe
 85 90 95

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

<210> 30
 <211> 321
 <212> DNA
 <213> Mus musculus

<220>
 <221> Nucleic acid sequence of the light chain variable region of 6H8
 <222> (1)..(321)

<400> 30
 aacattgtaa tgacccaatc tcccaaatcc atgtccatgt cagtgggcga gagggtcacc 60
 ttgagctgca aggccagtga gaatgtgggt acttatgtat cctggatatca acagaaacca 120
 gagcagtctc ctaaactgct gatatacggg gcatccaacc ggtacactgg ggtccccgat 180
 cgcttcacag gcagtggatc tgcaacagat ttcactctga ccatcagcag tgtgcaggct 240
 gaagaccttg cagattatca ctgtggacag agttacagct atccattcac gttcggctcg 300
 gggacaaaagt tggaataaaa a 321

<210> 31
 <211> 116
 <212> PRT
 <213> Mus musculus

<220>
 <221> Amino acid sequence of heavy chain variable region of 6H8
 <222> (1)..(116)

<400> 31

19

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

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

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

Ala Glu Ile Arg Leu Lys Ser Asn Asn Tyr Ala Thr His Tyr Ala Glu
 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 Thr Glu Asp Thr Gly Ile Tyr
 85 90 95

Tyr Cys Thr Ser Tyr Asp Tyr Glu Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ala
 115

<210> 32
 <211> 348
 <212> DNA
 <213> Mus musculus

<220>
 <221> Nucleic acid sequence of the heavy chain variable region of 6H8
 <222> (1)..(348)

<400> 32
 gaagtgaagc ttgaggagtc tggaggaggc ttggtgcaac ctggaggatc catgaaactc 60
 tcctgtgttg cctctggatt cactttcagt aacttctgga tgaactgggt ccgccagtct 120
 ccagagaagg ggcttgagtg ggttgctgaa attagattga aatctaataa ttatgcaaca 180
 cattatgcgg agtctgtgaa agggagggtc accatctcaa gagatgattc caaaagtagt 240
 gtctacctgc agatgaacaa cttaagaact gaagacactg gcatttatta ctgtaccagc 300

tatgattacg aatactgggg ccaagggact ctggtcaccg tctctgca 348

<210> 33
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> pFL-6H8-F1

<400> 33
 cccagccggc catggccgaa gtgaagcttg aggagtct 38

<210> 34
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> linker-R1

<400> 34
 caaagttgga aataaaagcg gccgcagaac aaaa 34

<210> 35
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> linker-F1

<400> 35
 ttttgttctg cggccgcttt tatttccaac tttg 34

<210> 36
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> pFL-6H8-R2

<400> 36
 ttttgttctg cggccgcttt tatttccaac tttg 34

<210> 37
 <211> 37

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> 6H8-L1-F1

 <400> 37
 cagccggcca tggccgaagt gcagcttggtg gagtctg 37

 <210> 38
 <211> 53
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 6H8-L1-F2

 <220>
 <221> misc_feature
 <222> (34)..(35)
 <223> R = G or A, S = G or C

 <400> 38
 cgccaggctc caggggaaggg gcttgagtgg gttrscgaaa ttagattgaa atc 53

 <210> 39
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 6H8-L1-F3

 <220>
 <221> misc_feature
 <222> (17)..(17)
 <223> R = G or A

 <400> 39
 cagatgaact ccttaargac tgaagacact gccgtgtatt actgtaccag 50

 <210> 40
 <211> 48
 <212> DNA
 <213> Artificial Sequence

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 <223> M = A or C

<220>
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48

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<220>
 <223> 6H8-L1_R2

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53

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<220>
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<220>
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 <222> (39)..(39)
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<400> 42
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47

<210> 43
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<212> DNA
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<220>
 <223> 6H8-L1-R4

<400> 43
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38

<210> 44
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<220>
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<220>
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<220>
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 <223> V = G or C or A

<400> 44
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49

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<220>
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 <222> (19)..(19)
 <223> M = A or C

<220>

<221> misc_feature
 <222> (22)..(22)
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<400> 45
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39

<210> 46
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<220>
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<220>
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 <223> Y = T or C

<220>
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 <222> (20)..(20)
 <223> S = G or C

<220>
 <221> misc_feature
 <222> (24)..(24)
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<400> 46
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53

<210> 47
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 <212> DNA
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<220>
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<400> 47
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50

<210> 48
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<223> 6H8-L1_R6

<220>

<221> misc_feature

<222> (33)..(33)

<223> H = A or C or T

<220>

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<222> (36)..(36)

<223> K = G or T

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51

<210> 49

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> 6H8-L1_R8

<400> 49

tttgttctgc ggccgctttt atttccaact ttgtccc

37

<210> 50

<211> 54

<212> DNA

<213> Artificial Sequence

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<223> 6H8-L1_R7

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<223> W = A or T

<220>

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<222> (24)..(24)

<223> M = A or C

<400> 50

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54

<210> 51
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<400> 51
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<210> 52
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 <212> DNA
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<220>
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<400> 52
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<210> 53
 <211> 41
 <212> DNA
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<220>
 <223> PCI-wbp229_F2

<400> 53
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<210> 54
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 <212> DNA
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<220>
 <223> PCI-wbp229_F3

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<210> 55
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 <212> DNA
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<220>

<223> 6H8-L1_R2

<400> 55

ccctggagcc tggcggaccc agttcatcca gaagttactg aaagtgaatc cag

53

<210> 56

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> 6H8-L1_R5

<400> 56

ggtgaccctg tcgcccactg agrsggacag ggwggvggga gattggggtc

49

<210> 57

<211> 39

<212> DNA

<213> Artificial Sequence

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<223> PCI-wbp229_R1

<400> 57

gggcccttgg tcgacgctgc agagacagtg accagagtc

39