

FIG. 1A

Heavy chain hu5c8 (SEQ ID NO: 21)

QVQLVQSGAE VVKPGASVKL SCKASGYIFT SYMYWVKQA PGQGLEWIGE
 INPSNGDTNF NEKFKSKATL TVDKSASTAY MELSSLRSED TAVYYCTRSD
 GRNDMDSWGQ GTLTVVSSAS TKGPSVFPLA PSSKSTSGGT AALGCLVKDY
 FPEPVTVSWN SGALTSGVHT FPAVLQSSGL YSLSSVVTVP SSSLGTQTYI
 CNVNHKPSNT KVDKKVEPKS CDKTHTCPPC PAPELLGGPS VFLFPPKPKD
 TLMISRTPEV TCVVVDVSHE DPEVKFNWYV DGVEVHNAKT KPREEQYNST
 YRVVSVLTVL HQDWLNGKEY KCKVSNKALP APIEKTISKA KGQPREPQVY
 TLPPSRDELT KNQVSLTCLV KGFYPSDIAV EWESNGQPEN NYKTTTPVLD
 SDGSFFLYSK LTVDKSRWQQ GNVFSCSVMH EALHNHYTQK SLSLSPGK

FIG. 1B

Heavy chain JB5 (SEQ ID NO: 9)

QVQLVQSGAE VVKPGASVKL SCKASGYIFT SYMYWVKQA PGQGLEWIGE
 INPSNGDTNF NEKFKSKATL TVDKSASTAY MELSSLRSED TAVYYCTRSD
 GRNDMDSWGQ GTLTVVSSAS TKGPSVFPLA PSSKSTSGGT AALGCLVKDY
 FPEPVTVSWN SGALTSGVHT FPAVLQSSGL YSLSSVVTVP SSSLGTQTYI
 CNVNHKPSNT KVDKKVEPKS **SDKTHTSPPS** PAPELLGGSS VFLFPPKPKD
 TLMISRTPEV TCVVVDVSHE DPEVKFNWYV DGVEVHNAKT KPREEQYNST
 YRVVSVLTVL HQDWLNGKEY KCKVSNKALP APIEKTISKA KGQPREPQVY
 TLPPSRDELT KNQVSLTCLV KGFYPSDIAV EWESNGQPEN NYKTTTPVLD
 SDGSFFLYSK LTVDKSRWQQ GNVFSCSVMH EALHNHYTQK SLSLSPGK

FIG. 1C

Heavy chain JB5-K74R (SEQ ID NO: 13)

QVQLVQSGAE VVKPGASVKL SCKASGYIFT SYMYWVKQA PGQGLEWIGE
 INPSNGDTNF NEKFKSKATL TVD**R**SASTAY MELSSLRSED TAVYYCTRSD
 GRNDMDSWGQ GTLTVVSSAS TKGPSVFPLA PSSKSTSGGT AALGCLVKDY
 FPEPVTVSWN SGALTSGVHT FPAVLQSSGL YSLSSVVTVP SSSLGTQTYI
 CNVNHKPSNT KVDKKVEPKS **SDKTHTSPPS** PAPELLGG**SS** VFLFPPKPKD
 TLMISRTPEV TCVVVDVSHE DPEVKFNWYV DGVEVHNAKT KPREEQYNST
 YRVVSVLTVL HQDWLNGKEY KCKVSNKALP APIEKTISKA KGQPREPQVY
 TLPPSRDELT KNQVSLTCLV KGFYPSDIAV EWESNGQPEN NYKTTTPVLD
 SDGSFFLYSK LTVDKSRWQQ GNVFSCSVMH EALHNHYTQK SLSLSPGK

FIG. 2A

Light Chain JB5 (SEQ ID NO: 7)

DIVLTQSPAT LSVSPGERAT ISCRASQRVS SSTYSYMHWY QQKPGQPPKL
 LIKYASNLES GVPARFSGSG SGTDFTLTIS SVEPEDFATY YCQHSWEIPP
 TFGGGTKLEI KRTVAAPSVF IFPPSDEQLK SGTASVVCLL NNFYPPREAKV
 QWKVDNALQS GNSQESVTEQ DSKDSTYSLs STLTLsKADY EKHKVYACEV
 THQGLSSPVT KSFNRGEC

FIG. 2B

Light Chain JB5-R28K (SEQ ID NO: 11)

DIVLTQSPAT LSVSPGEKAT ISCRASQ**K**VS SSTYSYMHWY QQKPGQPPKL
 LIKYASNLES GVPARFSGSG SGTDFTLTIS SVEPEDFATY YCQHSWEIPP
 TFGGGTKLEI KRTVAAPSVF IFPPSDEQLK SGTASVVCLL NNFYPPREAKV
 QWKVDNALQS GNSQESVTEQ DSKDSTYSLs STLTLsKADY EKHKVYACEV
 THQGLSSPVT KSFNRGEC

FIG. 2C

Fc region of hu5c8 (SEQ ID NO: 3)

EPKSCDKTHT CPPCPAPELL GGPSVFLFPP KPKDTLMISR TPEVTCVVVD
 VSHEDPEVKF NWYVDGVEVH NAKTKPREEQ YNSTYRVVSV LTVLHQDWLN
 GKEYKCKVSN KALPAPIEKT ISKAKGQPRE PQVYTLPPSR EEMTKNQVSL
 TCLVKGFYPS DIAVEWESNG QPENNYKTP PVLDSDGSFF LYSKLTVDKS
 RWQQGNVFSC SVMHEALHNH YTQKSLSLSP GK

FIG. 2D

Fc region of JB5 (SEQ ID NO: 4)

EPK**S**SDKTHT **S**PP**S**PAPELL GG**S**SVFLFPP KPKDTLMISR TPEVTCVVVD
 VSHEDPEVKF NWYVDGVEVH NAKTKPREEQ YNSTYRVVSV LTVLHQDWLN
 GKEYKCKVSN KALPAPIEKT ISKAKGQPRE PQVYTLPPSR EEMTKNQVSL
 TCLVKGFYPS DIAVEWESNG QPENNYKTP PVLDSDGSFF LYSKLTVDKS
 RWQQGNVFSC SVMHEALHNH YTQKSLSLSP GK

FIG. 3

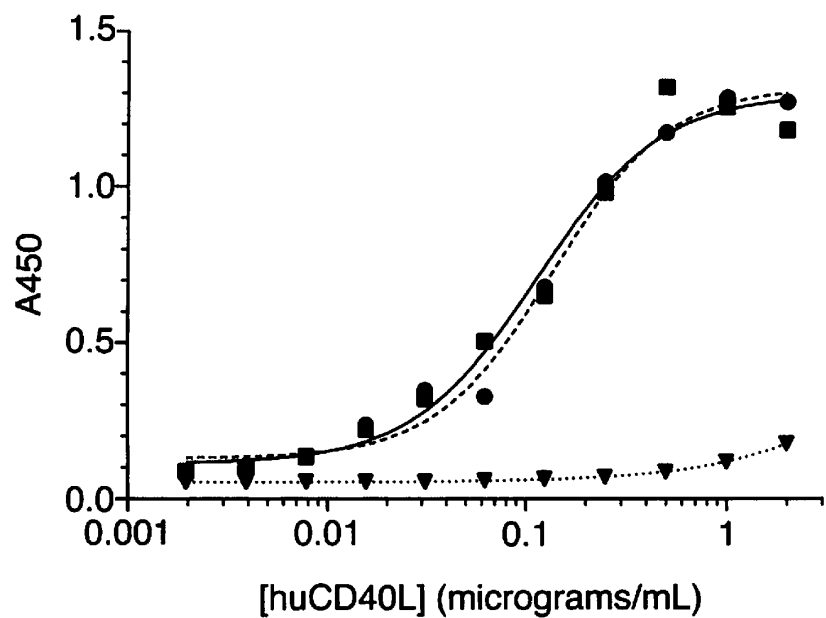


FIG. 4

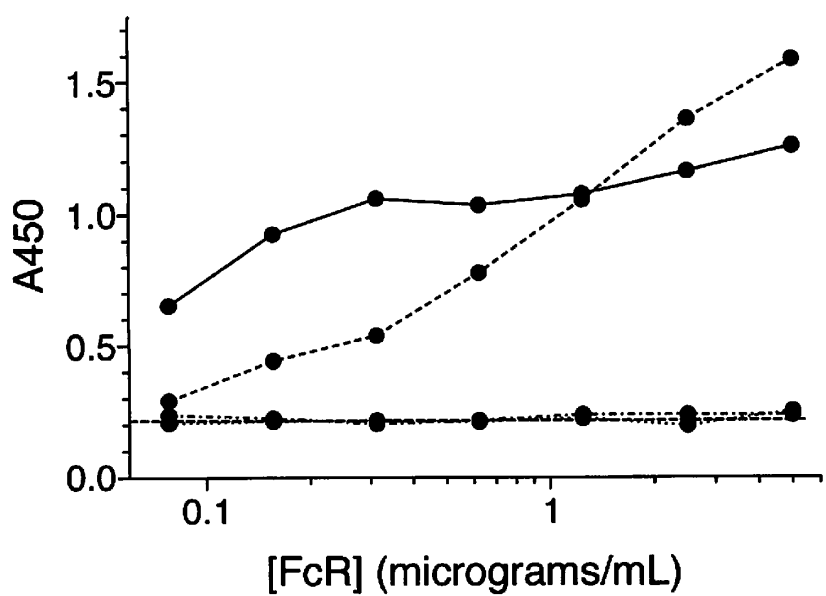
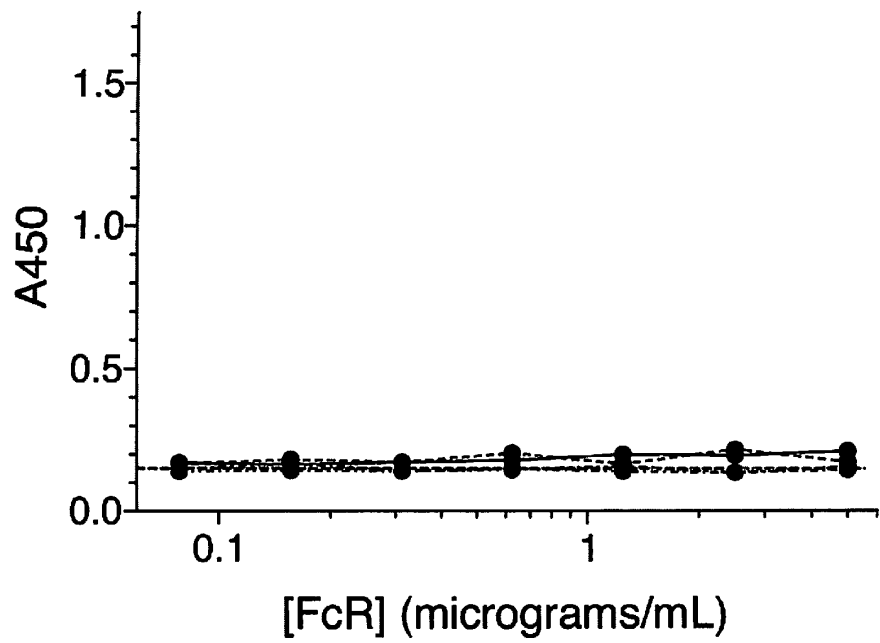


FIG. 5



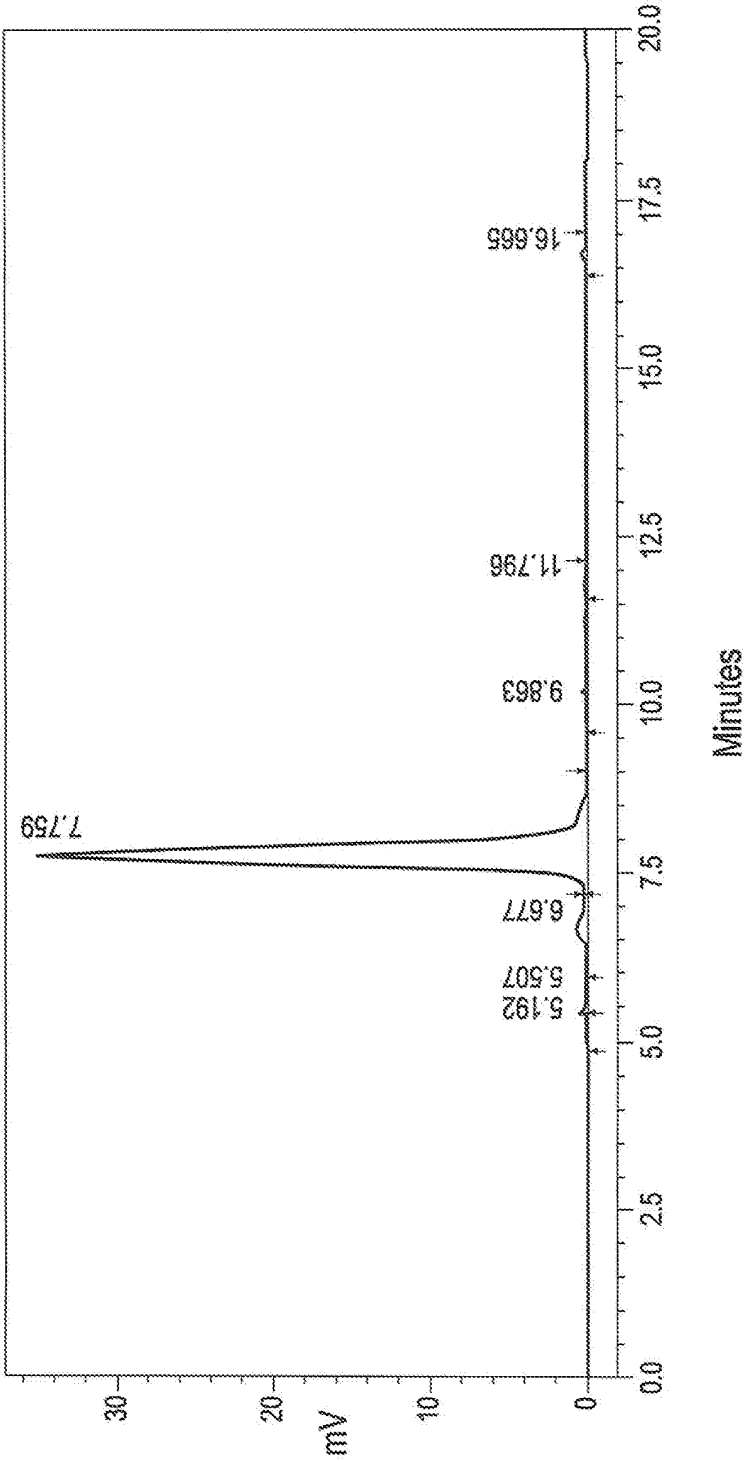


FIG. 6

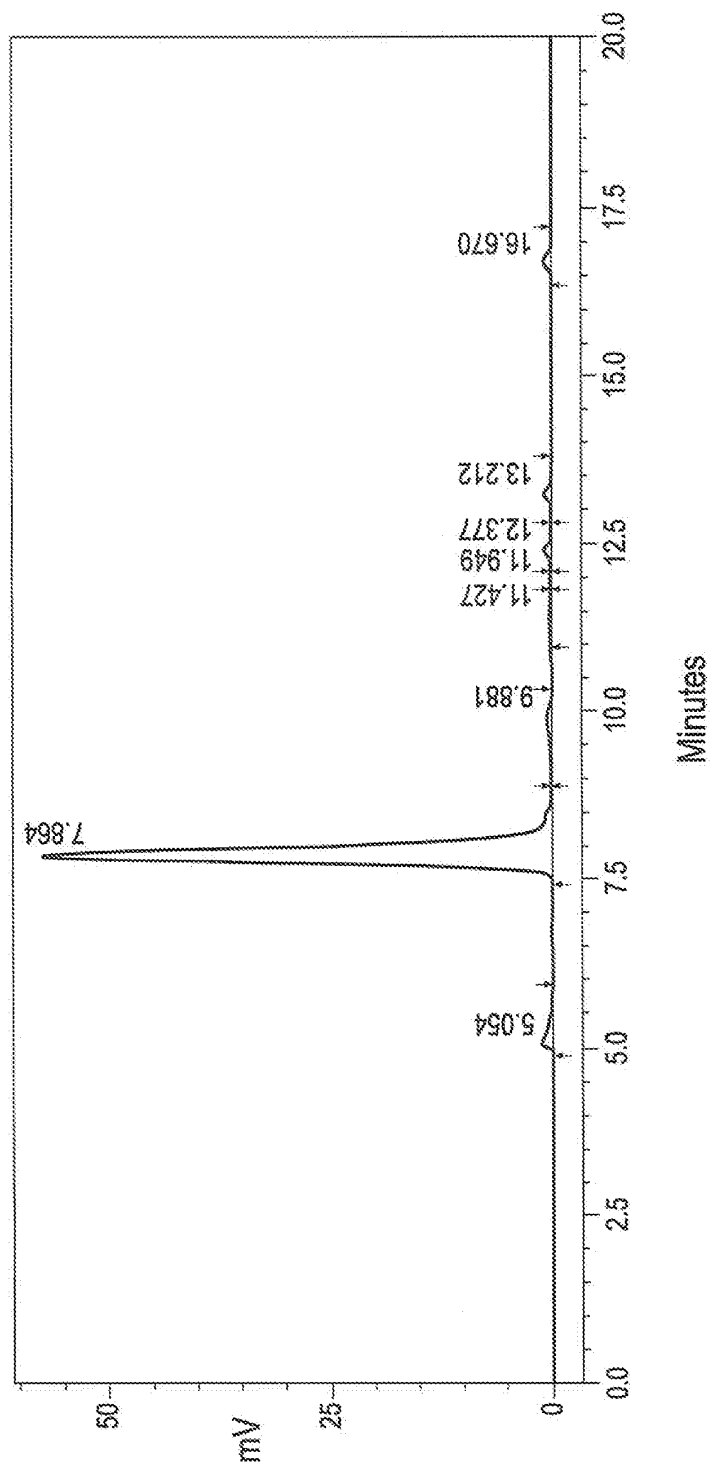
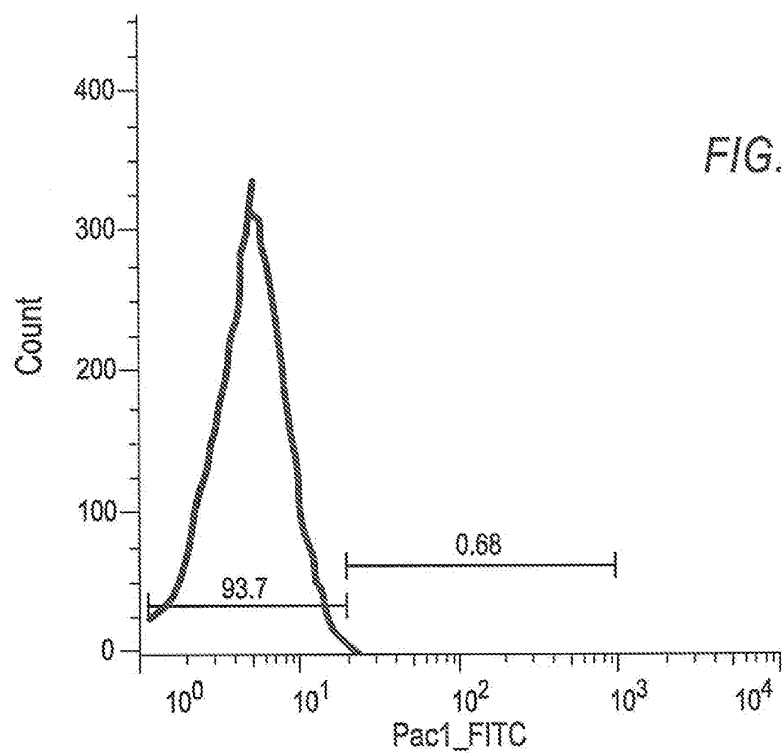
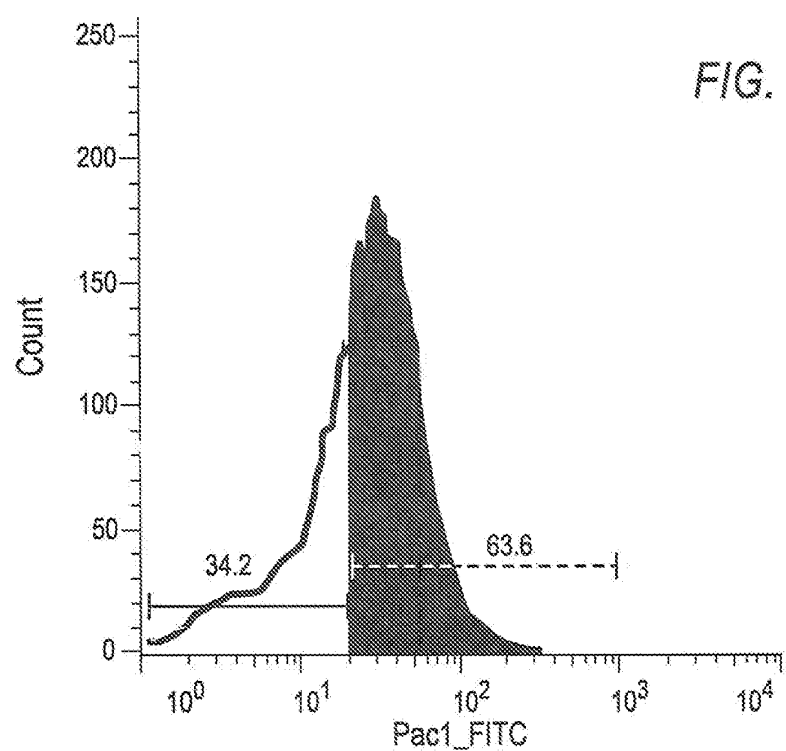
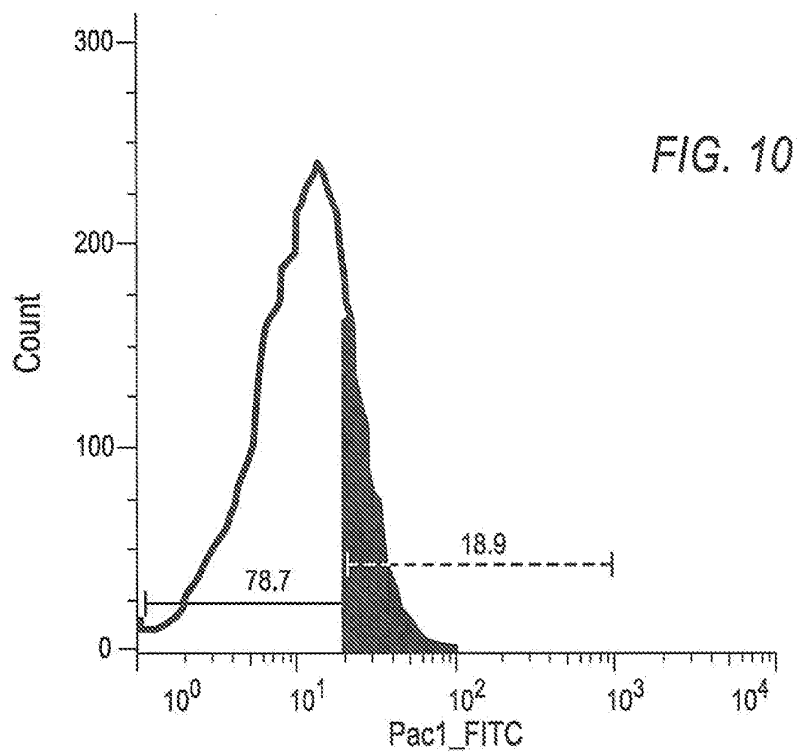
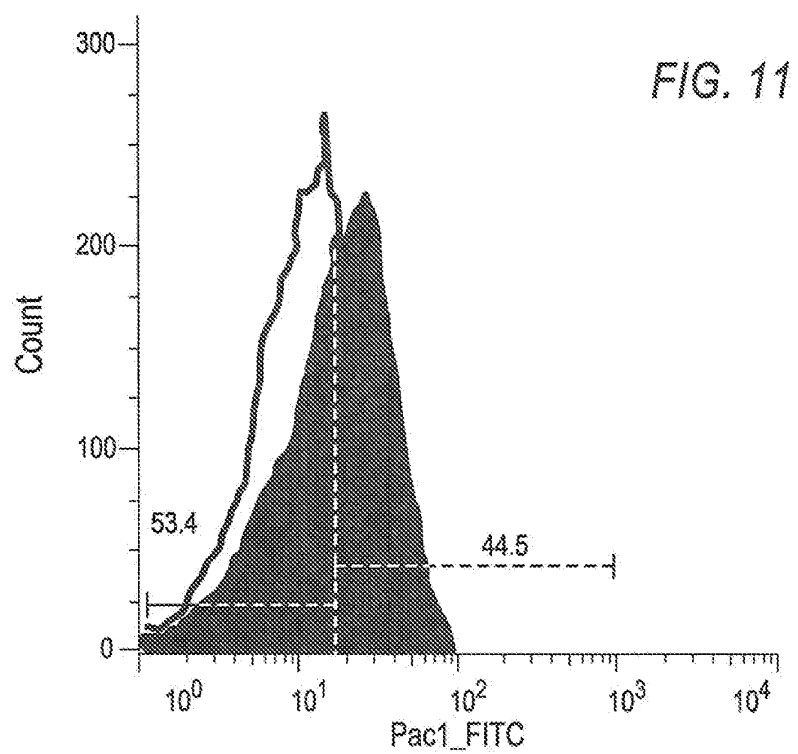


FIG. 7





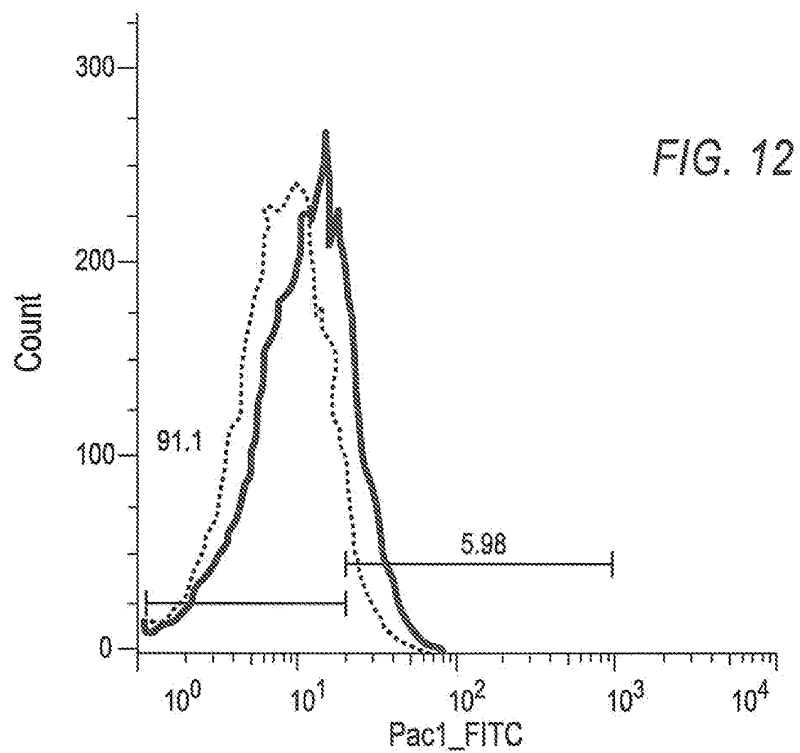
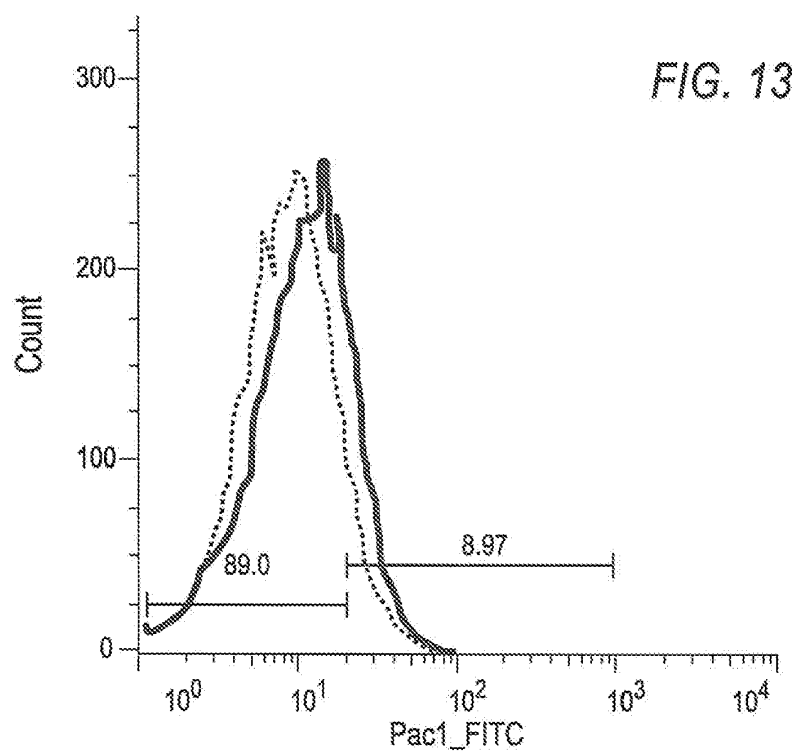


FIG. 14

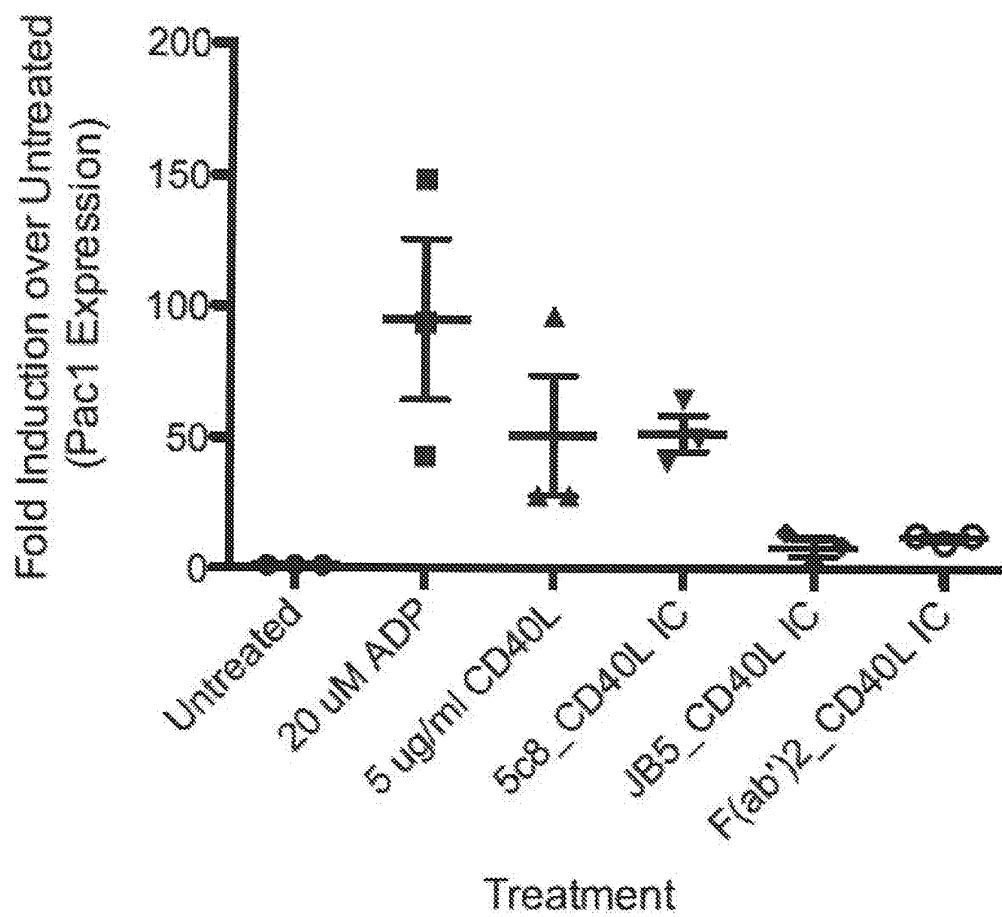


FIG. 15

SEQ ID NO:	Description	Sequence
1	hu5c8 and JB5 VL region	DIVLTQSPATLSVSPGERATISCRASQRVSSSTYSYMHWYQQKPGQPPKL LIKYASNLESGVPARFSGSGSGTDFTLTISSVEPEDFATYYCQHSWEIPP TFGGGTKLEIK
2	hu5c8 and JB5 VH region	QVQLVQSGAEVVKPGASVKLSCKASGYIFTSYMYWVKQAPGQGLEWIGE INPSNGDTNFKNEKFKSKATLTVDKSASTAYMELSSLRSEDATVYYCTRSD GRNDMDSWGQGTLLTVSS
3	Fc region	EPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLN GKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSL TCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTVDKS RWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
4	JB5 Fc region	EPKSSDKTHTSPSPAPPELLGGSSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLN GKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSL TCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTVDKS RWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
5	JB5-R28K VL region	DIVLTQSPATLSVSPGERATISCRASQKVSSSTYSYMHWYQQKPGQPPKL LIKYASNLESGVPARFSGSGSGTDFTLTISSVEPEDFATYYCQHSWEIPP TFGGGTKLEIK
6	JB5-K74R VH region	QVQLVQSGAEVVKPGASVKLSCKASGYIFTSYMYWVKQAPGQGLEWIGE INPSNGDTNFKNEKFKSKATLTVDKSASTAYMELSSLRSEDATVYYCTRSD GRNDMDSWGQGTLLTVSS
7	JB5 light chain Amino acid sequence	DIVLTQSPATLSVSPGERATISCRASQRVSSSTYSYMHWYQQKPGQPPKL LIKYASNLESGVPARFSGSGSGTDFTLTISSVEPEDFATYYCQHSWEIPP TFGGGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKV QWKVDNALQSGNSQESVTEQDSKDSSTYSLSSTLTLSKADYEKHKVYACEV THQGLSSPVTKSFNRGEC

FIG. 16

SEQ ID NO:	Description	Sequence
8	JB light chain nucleotide sequence	GACATCGTGCTGACCCAGTCCCCCGCCACCCTGTCCGTGTCCCCCGGCGA GAGGGCCACCATCTCCTGCAGGGCCTCCCAGAGGGTGTCTCTCCACCT ACTCCTACATGCACTGGTACCAGCAGAAGCCCGGCCAGCCCCCAAGCTG CTGATCAAGTACGCCTCCAACCTGGAGTCCGGCGTGCCCGCCAGGTTCTC CGGCTCCGGCTCCGGCACCGACTTCACCCTGACCATCTCCTCCGTGGAGC CCGAGGACTTCGCCACCTACTACTGCCAGCACTCCTGGGAGATCCCCCCC ACCTTCGGCGGGCGGCACCAAGCTGgaaatcaaaCGTACGGTGGCTGCACC ATCTGTCTTCATCTTCCCGCCATCTGATGAGCAGTTGAAATCTGGAAGT CCTCTGTTGTGTGCCTGCTGAATAACTTCTATCCCAGAGAGGCCAAAGTA CAGTGGAAGGTGGATAACGCCCTCCAATCGGGTAACTCCCAGGAGAGTGT CACAGAGCAGGACAGCAAGGACAGCACCTACAGCCTCAGCAGCACCTGA CGCTGAGCAAAGCAGACTACGAGAAACACAAAGTCTACGCTGCGAAGTC ACCCATCAGGGCCTGAGCTCGCCCGTCACAAAGAGCTTCAACAGGGGAGA GTGTTAGTGA
9	JB5 heavy chain amino acid sequence	QVQLVQSGAEVVKPGASVKLSCKASGYIFTSYYMYWVKQAPGQGLEWIGE INPSNGDTNFKSKATLTVDKSASTAYMELSSLRSEDTAVYYCTRSD GRNDMDSWGQGLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDY FPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYI CNVNHKPSNTKVDKKVEPKSSDKTHTSPSPAPELLGGSSVFLFPPKPKD TLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNST YRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLD SDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

FIG. 17

SEQ ID NO:	Description	Sequence
10	JB5 heavy chain nucleic acid sequence	<p> CAGGTGCAGCTGGTGCAGTCCGGCGCCGAGGTGGTGAAGCCCGGCGCCTC CGTGAAGCTGTCTTGCAAGGCCTCCGGCTACATCTTCACCTCCTACTACA TGTACTGGGTGAAGCAGGCCCGCCGAGGCCTGGAGTGGATCGGCGAG ATCAACCCCTCCAACGGCGACACCAACTTCAACGAGAAGTTCAAGTCCAA GGCCACCCTGACCGTGGACAAGTCCGCCTCCACCGCTACATGGAGCTGT CCTCCCTGAGGTCCGAGGACACCGCCGTGTACTACTGCACCAGGTCCGAC GGCAGGAACGACATGGACTCTGGGGCCAGGGCACCTGGTGACCGTGTCT CTCCGCTAGCACCAAGGGCCCATCGGTCTTCCCCCTGGCACCTCCTCCA AGAGCACCTCTGGGGGCACAGCAGCCCTGGGCTGCCTGGTCAAGGACTAC TTCCCCGAACCGGTGACGGTGTCTGGAAGTCAAGCGCCCTGACCAGCGG CGTGACACCTTCCCGGCTGTCTACAGTCTCAGGACTCTACTCCCTCA GCAGCGTGGTGACCGTGCCCTCCAGCAGCTTGGGCACCCAGACCTACATC TGCAACGTGAATCACAAGCCCAGCAACACCAAGGTGGACAAGAAAGTTGg tgagaggccagcacagggagggaggggtgtctgctggaagccaggctcagc gctcctgcttgacgcatcccggctatgcagccccagtcaggggcagcaa ggcaggccccgtctgctcttcccccggaggcctctgcccggcccaactca tgctcaggagaggggtcttctggctttttccccaggctctgggcaggcac aggctagggtgccccctaacccaggccctgcacacaaaggggcagggtgctg gtcagacctgccaagagccataatccgggaggaccctgccccagcctaa gcccaccccaaaggccaaactctccactccctcagctcggaacacctctc tcctcccagattccagtaactcccaatcttctctctctgcagAGCCCAAATC TAGTGACAAAACCTCACACAAGCCACCGAGCCAGgtaagccagcccagg cctcgccctccagctcaaggcggaaggtgccctagagtagcctgcac cagggaagggccagccgggtgctgacacgtccacctccatctcttctc cagCACCTGAACCTCTGGGGGATCCTCAGTCTTCCTCTTCCCCCAAAA CCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTACATGCGTGGT GGTGGACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGG ACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTAC AACAGCACGTACCGTGTGGTCAGCGTCTCACCCTCTGCACCAGGACTG GCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCAG CCCCATCGAGAAAACCATCTCCAAGCCAAAGgtgggacccgtgggggtg cgagggccacatggacagaggccgggtcgggccacccctctgcccagag tgaccgtgtaccaacctctgtccctacagGGCAGCCCCGAGAACCACAG GTGTACACCCTGCCCCCATCCCGGATGAGCTGACCAAGAACCAGGTGAG CCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGT GGGAGAGCAATGGGCAGCCGGAGAACAACTACAAGACCACGCTCCCGTG CTGGACTCCGACGGCTCCTTCTTCTCTACAGCAAGCTCACCGTGGACAA GAGCAGGTGGCAGCAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGG CTCTGCACAACCACTACACACAGAAGAGCCTCTCCCTGTCTCCGGGTAAA taatga </p>

FIG. 18

SEQ ID NO:	Description	Sequence
11	JB5-R28K light chain amino acid sequence	DIVLTQSPATLSVSPGERATISCRASQKVSSSTYSYMHWYQOKPGQPPKL LIKYASNLESGVPARFSGSGGTDFLTITISSVEPEDFATYYCQHSWEIIP TFGGGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVCLLNNFYPREAKV QWKVDNALQSGNSQESVTEQDSKDSSTYSLSSTLTLSKADYEKHKVYACEV THQGLSSPVTKSFNRGEC
12	JB5-R28K light chain nucleic acid sequence	GACATCGTGCTGACCCAGTCCCCCGCCACCCTGTCCGTGTCCCCCGGCGA GAGGGCCACCATCTCCTGCAGGGCCTCCAGAAAGGTGTCCTCCTCCACCT ACTCCTACATGCACTGGTACCAGCAGAAGCCCGGCCAGCCCCCAAGCTG CTGATCAAGTACGCCTCCAACCTGGAGTCCGGCGTGCCCGCCAGGTTCTC CGGCTCCGGCTCCGGCACCAGCTTACCCTGACCATCTCCTCCGTGGAGC CCGAGGACTTCGCCACCTACTACTGCCAGCACTCCTGGGAGATCCCCCCC ACCTTCGGCGGGCGGCACCAAGCTGgaaatcaaaCGTACGGTGGCTGCACC ATCTGTCTTCATCTTCCCGCCATCTGATGAGCAGTTGAAATCTGGAAGT CCTCTGTTGTGTGCCTGCTGAATAACTTCTATCCCAGAGAGGCCAAAGTA CAGTGGAAGGTGGATAACGCCCTCCAATCGGGTAACTCCCAGGAGAGTGT CACAGAGCAGGACAGCAAGGACAGCACCTACAGCCTCAGCAGCACCTGA CGCTGAGCAAAGCAGACTACGAGAAACACAAAGTCTACGCCTGCGAAGTC ACCCATCAGGGCCTGAGCTCGCCCGTCACAAAGAGCTTCAACAGGGGAGA GTGTTAGTGA
13	JB5-K74R heavy chain amino acid	QVQLVQSGAEVVKPGASVKLSCKASGYIFTSYYMYWVKQAPGQGLEWIGE INPSNGDTNFKFKSKATLTVDRSASTAYMELSSLRSEDTAVYYCTRSD GRNDMDSWGQGLTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDY FPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYI CNVNHKPSNTKVDKKVEPKSSDKTHTSPSPAPELLGSSSVFLFPPKPKD TLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNST YRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLD SDGSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

FIG. 19

SEQ ID NO:	Description	Sequence
14	JB5-K74R heavy chain nucleic acid sequence	CAGGTGCAGCTGGTGCAGTCCGGCGCCGAGGTGGTGAAGCCCGGCGCCTC CGTGAAGCTGTCCTGCAAGGCCTCCGGCTACATCTTCACCTCCTACTACA TGTACTGGGTGAAGCAGGCCCCCGGCCAGGGCCTGGAGTGGATCGGCGAG ATCAACCCCTCCAACGGCGACACCAACTTCAACGAGAAGTTCAAGTCCAA GGCCACCCTGACCGTGGACAGGTCCGCCTCCACCGCTACATGGAGCTGT CCTCCCTGAGGTCCGAGGACACCGCCGTGTACTACTGCACCAGGTCCGAC GGCAGGAACGACATGGACTCCTGGGGCCAGGGCACCCCTGGTGACCGTGT CTCCGCTAGCACCAAGGGCCCATCGGTCTTCCCCCTGGCACCCCTCCTCCA AGAGCACCTCTGGGGGCACAGCAGCCCTGGGCTGCCTGGTCAAGGACTAC TTCCCCGAACCGGTGACGGTGTCTGGAAGTCAAGCGCCCTGACCAGCGG CGTGACACCTTCCCGGCTGTCTACAGTCTCAGGACTCTACTCCCTCA GCAGCGTGGTGACCGTGCCCTCCAGCAGCTTGGGCACCCAGACCTACATC TGCAACGTGAATCACAAGCCCAGCAACACCAAGGTGGACAAGAAAGTTGg tgagaggccagcacagggagggaggggtgtctgtctggaagccaggctcagc gtcctctgcctggacgcatcccggctatgcagccccagtcaggggcagcaa ggcaggccccgtctgcctcttccccggagggcctctgcccgccccactca tgctcaggagaggggtcttctggcttttccccaggctctgggcaggcag aggctaggtgccccctaaacccaggccctgcacacaaaggggcagggtgtctg gtcagacctgccaagagccatatccgggaggaccctgccccctgacctaa gcccacccccaaaggccaaactctccactccctcagctcgggacacctctc tcctcccagattccagtaactcccaatcttctctctctgcagAGCCCAAATC TAGTGACAAAACCTCACACAAGCCCACCGAGCCAGgtaagccagcccagg cctcgccctccagctcaaggcgggacaggtgccctagagtagcctgcac cagggaacaggccccagccgggtgttgacacgtccacctccatctcttctc cagCACCTGAACCTCTGGGGGATCCTCAGTCTTCTCTTCCCCCAAAA CCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTACATGCGTGGT GGTGGACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGG ACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTAC AACAGCACGTACCGTGTGGTCAGCGTCCTCACCGTCTGCACCAGGACTG GCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCAG CCCCATCGAGAAAACCATCTCCAAAGCCAAAGgtgggacccgtgggggtg cgagggccacatggacagaggccgggtcggccccacctctgcccctgagag tgaccgctgtaccaacctctgtccctacagGGCAGCCCCGAGAACCACAG GTGTACACCCTGCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTGAG CCTGACCTGCCTGGTCAAAGGCTTCTATCCAGCGACATCGCCGTGGAGT GGGAGAGCAATGGGCAGCCGGAGAACAATAACAAGACCACGCCTCCCGTG CTGGACTCCGACGGCTCCTTCTTCTCTACAGCAAGCTCACCGTGGACAA GAGCAGGTGGCAGCAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGG CTCTGCACAACCACTACACACAGAAGAGCCTCTCCCTGTCTCCGGGTAAA taatga

FIG. 20

SEQ ID NO:	Description	Sequence
15	JB5 CDR-L1	ISCRASQVRVSSSTYSYMH
16	JB5 CDR-L2	YASNLES
17	JB5 CDR-L3	QHSWEI PPT
18	JB5 CDR-H1	SYMY
19	JB5 CDR-H2	EINPSNGDTNFNEKFKS
20	JB5 CDR-H3	SDGRNDMDS
21	Hu5c8 Heavy Chain	QVQLVQSGAEVVKPGASVKLSCKASGYIFTSYMYWVKQAPGQGLEWIG EINPSNGDTNFNEKFKSKATLTVDKSASTAYMELSSLRSED TAVYYCTR SDGRNDMDSWGQGTLLTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLV KDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGT QTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPP PKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPRE EQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY KTTTPVLDSGSEFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKS LSLSPGK