

[Figure 1]

SEQ ID NO 2: Amino acid sequence of 04-046 antibody heavy chain

MEWNWVFLFLLSVTAEVHSQVQLQQSGAELAKPGSSVKISCKASGYTFTSYIIS
WIKQTTGQGLKYIGFINPGSGHTNYNEKFKGKATLTVDKSSSTAFMQLSSLTPD
DSAIYYCARGAGGFLRIITKFDYWGQGVMTVSSAQTTAPSVYPLAPGCGDTTSS
TVTLGCLVKGYFPEPVTVTWNSGALSSDVHTFPAVLQSGLYTLTSSVTSSTWPSQ
TVTCNVAHPASSTKVDKKVERRNGGIGHKCPTCPTCHKCPVPELLGGPSVFIFPP
KPKDILLISQNAKVTCVVVDVSEEEPDVQFSWVNNVEVHTAQTQPREEQYNST
FRVVSALPIQHQQDWMSGKEFKCKVNNKALPSPIEKTISKPKGLVRKPQVYVMGP
PTEQLTEQTVSLTCLTSGFLPNDIGVEWTSNGHIEKNYKNTEPVMDSDGSFFMY
SKLNVERSRWDSRAPFVCSVVHEGLHNHHVEKSISRPPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain constant region (143-475)

CDRH1 (45-54), CDRH2 (69-78), CDRH3 (118-131)

SEQ ID NO 32: Nucleotide sequence of 04-046 antibody heavy chain

ATGGAATGGAAGTGGGTCTTTCTCTTCCTCCTGTCAGTAAGTGCAGAGGTCCAC
TCCCAGGTCCAACTGCAGCAGTCTGGAGCTGAACTGGCAAAGCCTGGCTCTTC
AGTGAAGATTTCTGCAAGGCTTCTGGCTACACCTTCACCAGCTACTATATAAG
CTGGATAAAGCAGACGACTGGACAGGGCCTTAAGTATATTGGATTTATTAATCC
GGGAAGTGGACATACTAACTACAATGAGAAGTTCAAGGGCAAGGCCACATTGA
CTGTAGACAAATCCTCTAGCACAGCCTTCATGCAACTCAGCAGCCTGACACCTG
ACGACTCTGCGATCTATTACTGTGCAAGAGGGGCTGGGGGTTTTCTACGGATTA
TTACTAAGTTTGATTACTGGGGCCAAGGAGTCATGGTCACAGTCTCCTCAGCCC
AAACAACAGCCCCATCTGTCTATCCACTGGCTCCTGGATGTGGTGATACAACCA
GCTCCACGGTGAAGTCTGGGATGCCTGGTCAAGGGCTATTTCCCTGAGCCAGTC
ACCGTGACCTGGAAGTCTGGAGCCCTGTCCAGCGATGTGCACACCTTTCCAGC
TGTCTGTCAGTCTGGGCTCTACACTCTCACCAGCTCAGTGACCTCCAGCACCTG
GCCCAGCCAGACCGTCACCTGCAACGTAGCCCAACCGGCCAGCAGCACCAAGG
TGGACAAGAAAGTTGAGCGCAGAAATGGCGGCATTGGACACAAATGCCCTACA
TGCCCTACATGTCAAAATGCCAGTTCTTGAAGTCTTGGGTGGACCATCTGTC
TTCATCTTCCCGCCAAAGCCCAAGGACATCCTCTTGATCTCCAGAACGCCAAG
GTCACGTGTGTGGTGGTGGATGTGAGCGAGGAGGAGCCGACGTCCAGTTCA
GCTGGTTTTGTGAACAACGTAGAAGTACACACAGCTCAGACACAACCCCGTGAG
GAGCAGTACAACAGCACCTTCAGAGTGGTCAGTGCCCTCCCCATCCAGCACCA
GGACTGGATGAGCGGCAAGGAGTTCAAATGCAAGGTCAACAACAAAGCCCTCC
CAAGCCCCATCGAGAAAACCATCTCAAAACCCAAAGGGCTAGTCAGAAAACCA
CAGGTATACGTCATGGGTCCACCGACAGAGCAGTTGACTGAGCAAACGGTCAG
TTTGACCTGCTTGACCTCAGGCTTCCTCCCTAACGACATCGGTGTGGAGTGGAC
CAGCAACGGGCATATAGAAAAGAACTACAAGAACACCGAGCCAGTGATGGACT
CTGACGGTTCTTTCTTCATGTACAGCAAGCTCAATGTGGAAAGGAGCAGGTGG
GATAGCAGAGCGCCCTTCGTCTGCTCCGTGGTCCACGAGGGTCTGCACAATCA
CCACGTGGAGAAGAGCATCTCCCGGCCTCCGGGTAAA

Signal sequence (1-57), heavy chain variable region (58-426), heavy chain constant region (427-1425)

CDRH1(133-162), CDRH2(205-234), CDRH3 (352-393)

[Figure 2]

SEQ ID NO 7: Amino acid sequence of 04-046 antibody light chain

METDRLLLWVLLLWVPGSTGDTVLTQSPALAVSLGQRVTISCRASKSVSTYIHWY
 QQRSGQQPKLLIYSASNLESGVPSRFSGSGSGTDFTLTIDPVEPDDIANYYCQQIN
 ELPYTFGAGTKLELKRADAAPTVSIFPPSTEQLATGGASVCLMNNFYPRDISVK
 WKIDGTERRDGVLDSDVDQDSKDYSSSTLSLTKADYESHNLYTCEVVHKTS
 SSPVVKSFNRNEC

Signal sequence (1-20), light chain variable region (21-128), light chain constant region (129-233)

CDRH1 (43-53), CDRH2 (69-75), CDRH3 (108-116)

SEQ ID NO 34: Nucleotide sequence of 04-046 antibody light chain

ATGGAGACAGACAGACTCCTGCTATGGGTGCTGCTGCTCTGGGTTCCAGGCTC
 CACTGGTGACACTGTGCTGACCCAGTCTCCTGCTTTGGCTGTGTCTCTAGGGC
 AGAGGGTCACCATCTCCTGTAGGGCCAGCAAAAGTGTGAGTACATATATACACT
 GGTACCAACAGAGGTCGGGACAGCAACCCAACTCCTGATCTATAGTGCATCCA
 ACCTAGAATCTGGAGTCCCTTCCAGGTTGAGTGGGAGTGGGTCTGGGACAGAC
 TTTACCCTCACCATAGATCCTGTGGAGCCTGATGACATAGCAAATATTACTGTC
 AGCAGATTAATGAACTTCCGTACACGTTTGGAGCTGGGACCAAGCTGGAAGT
 AAACGGGCTGATGCTGCACCAACTGTATCTATCTTCCCACCATCCACGGAACAG
 TTAGCAACTGGAGGTGCCTCAGTCGTGTGCCTCATGAACAACTTCTATCCCAGA
 GACATCAGTGTCAAGTGGAAGATTGATGGCACTGAACGACGAGATGGTGTCTC
 GGACAGTGTACTGATCAGGACAGCAAAGACAGCACGTACAGCATGAGCAGCA
 CCCTCTCGTTGACCAAGGCTGACTATGAAAGTCATAACCTCTATACCTGTGAGG
 TTGTTTCATAAGACATCATCCTCACCCGTCGTCAAGAGCTTCAACAGGAATGAGT
 GT

Signal sequence (1-60), light chain variable region (61-384), light chain constant region (385-699)

CDRL1(127-159), CDRL2(205-225), CDRL3 (322-348)

[Figure 3]

SEQ ID NO 12: Amino acid sequence of 04-079 antibody heavy chain

MEWNWVFLFLLSVTAVVHSQVQLQQSGAELAKPGSSVKISCKASGYTFTSYIT
WIKQTTGQGLKYIGYINPGSGHTNYNEKFKGKATLTVDKSSSTAFMQLSSLTPD
DSAVYYCARGAGGFLRIISKFDYWGGQVMVTVSSAQTTAPSVYPLAPGCGDTTSS
TVTLGCLVKGYFPEPVTVTWNSGALSSDVHTFPAVLQSGLYTLTSSVTSSTWPSQ
TVTCNVAHPASSTKVDKKVERRNGGIGHKCPTCPTCHKCPVPELLGGPSVFIAPP
KPKDILLISQNAKVTCVVVDVSEEEPDVQFSWFVNNVEVHTAQTQPREEQYNST
FRVVSALPIQHQDWMSGKEFKCKVNNKALPSPIEKTISKPKGLVRKPQVYVMGP
PTEQLTEQTVSLTCLTSGFLPNDIGVEWTSNGHIEKNYKNTEPVMDSDGSFFMY
SKLNVERSRWDSRAPFVCSVVHEGLHNHHVEKSISRPPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain constant region (143-475)

CDRH1 (45-54), CDRH2 (69-78), CDRH3 (118-131)

SEQ ID NO 36: Nucleotide sequence of 04-079 antibody heavy chain

ATGGAGTGGAAGTGGGTCTTTCTCTTCCTCCTGTCAGTAAGTGCAGTCGTCCAC
TCCCAGGTCCAGCTGCAGCAGTCTGGAGCTGAGCTGGCAAAGCCTGGCTCTTC
AGTGAAGATTTCTGCAAGGCTTCTGGCTACACCTTCACCAGCTACTATATAAC
CTGGATAAAGCAGACGACTGGACAGGGCCTTAAGTATATTGGATATATTAATCC
GGGAAGTGGACATACTAACTACAATGAGAAGTTCAAGGGCAAGGCCACATTGA
CTGTAGACAAATCCTCCAGCACAGCCTTCATGCAACTCAGCAGCCTGACACCTG
ACGACTCTGCGGTCTATTACTGTGCAAGAGGGGCTGGGGGTTTTCTACGGATTA
TTAGTAAGTTTGATTACTGGGGCCAAGGAGTCATGGTCACAGTCTCCTCAGCCC
AAACAACAGCCCCATCTGTCTATCCACTGGCTCCTGGATGTGGTGATACAACCA
GCTCCACGGTGACTCTGGGATGCCTGGTCAAGGGCTATTTCCCTGAGCCAGTC
ACCGTGACCTGGAAGTCTGGAGCCCTGTCCAGCGATGTGCACACCTTTCCAGC
TGTCTGCAGTCTGGGCTCTACACTCTCACCAGCTCAGTGACCTCCAGCACCTG
GCCCAGCCAGACCGTCACCTGCAACGTAGCCCAACCGGCCAGCAGCACCAAGG
TGGACAAGAAAGTTGAGCGCAGAAATGGCGGCATTGGACACAAATGCCCTACA
TGCCCTACATGTCAAAATGCCAGTTCTTGAAGTCTTGGGTGGACCATCTGTC
TTCATCTTCCCGCCAAAGCCCAAGGACATCCTCTTGATCTCCAGAACGCCAAG
GTCACGTGTGTGGTGGTGGATGTGAGCGAGGAGGAGCCGGACGTCCAGTTCA
GCTGGTTTTGTGAACAACGTAGAAGTACACACAGCTCAGACACAACCCCGTGAG
GAGCAGTACAACAGCACCTTCAGAGTGGTCAGTGCCCTCCCCATCCAGCACCA
GGACTGGATGAGCGGCAAGGAGTTCAAATGCAAGGTCAACAACAAAGCCCTCC
CAAGCCCCATCGAGAAAACCATCTCAAAACCCAAAGGGCTAGTCAGAAAACCA
CAGGTATACGTCATGGGTCCACCGACAGAGCAGTTGACTGAGCAAACGGTCAG
TTTGACCTGCTTGACCTCAGGCTTCCTCCCTAACGACATCGGTGTGGAGTGGAC
CAGCAACGGGCATATAGAAAAGAACTACAAGAACACCGAGCCAGTGATGGACT
CTGACGGTTCTTTCTTCATGTACAGCAAGCTCAATGTGGAAAGGAGCAGGTGG
GATAGCAGAGCGCCCTTCGTCTGCTCCGTGGTCCACGAGGGTCTGCACAATCA
CCACGTGGAGAAGAGCATCTCCCGGCCTCCGGGTAAA

Signal sequence (1-57), heavy chain variable region (58-426), heavy chain constant region (427-1425)

CDRH1(133-162), CDRH2(205-234), CDRH3 (352-393)

[Figure 4]

SEQ ID NO 17: Amino acid sequence of 04-079 antibody light chain

METDRLLLWVLLLWVPGSTGDTVLTQSPALAVSLGQRVTISCRASKSVSTYMHW
YQQRSGQQPKLLIYSASNLESGVPSRFSGSGSGTDFTLTIDPVKADDITNYCQQ
SNELPYTFGAGTKLELKRADAAPTVSIFPPSTEQLATGGASVVCLMNNFYPRDIS
VKWKIDGTERRDGVLDVTDQDSKDSYSTMSSTLSLTKADYESHNLYTCEVVHK
TSSSPVVKSFNRNEC

Signal sequence (1-20), light chain variable region (21-128), light chain constant region (129-233)

CDRL1 (43-53), CDRL2 (69-75), CDRL3 (108-116)

SEQ ID NO 38: Nucleotide sequence of 04-079 antibody light chain

ATGGAGACAGACAGACTCCTGCTATGGGTGCTGCTGCTCTGGGTTCCAGGCTC
CACTGGTGACACTGTGCTGACCCAGTCTCCTGCTTTGGCTGTGTCTCTAGGGC
AGAGGGTCACCATCTCTTGTTAGGGCCAGCAAAAGTGTGAGTACATATATGCACT
GGTACCAACAGAGGTCGGGACAGCAACCCAACTCCTGATCTATAGTGCATCCA
ACCTAGAATCTGGAGTCCCTTCCAGGTTGAGTGGGAGTGGGTCTGGGACAGAC
TTTACCCTCACCATAGATCCTGTGAAGGCTGATGACATAACAACTATTACTGTC
AGCAGAGTAATGAACTTCCGTACACGTTTGGAGCTGGGACCAAGCTGGAAGT
AAACGGGCTGATGCTGCACCAACTGTATCTATCTTCCCACCATCCACGGAACAG
TTAGCAACTGGAGGTGCCTCAGTCGTGTGCCTCATGAACAACTTCTATCCCAGA
GACATCAGTGTCAAGTGGAAGATTGATGGCACTGAACGACGAGATGGTGTCTC
GGACAGTGTTACTGATCAGGACAGCAAAGACAGCACGTACAGCATGAGCAGCA
CCCTCTCGTTGACCAAGGCTGACTATGAAAGTCATAACCTCTATACCTGTGAGG
TTGTTTCATAAGACATCATCCTCACCCGTCGTCAAGAGCTTCAACAGGAATGAGT
GT

Signal sequence (1-60), light chain variable region (61-384), light chain constant region (385-699)

CDRL1(127-159), CDRL2(205-225), CDRL3 (322-348)

[Figure 5]

SEQ ID NO 22: Amino acid sequence of 04-126 antibody heavy chain

MEWNWVFLFLLSVTAEVHSQVQLRQSGAELAKPGSSVKISCKASGYTFTSYII
WMKQTAGQGLQYVGYINPGSGHTNYNEKFKGKATLTVDKSSSTAFMQLSSLTP
DDSAVYYCARGTGGFLRIISKFDYWGGVMVTVSSAQTTAPSVYPLAPGCGDTTS
STVTLGCLVKGYFPEPVTVTWNSGALSSDVHTFPAVLQSGLYTLTSSVTSSTWPS
QTVTCNVAHPASSTKVDKKVERRNGGIGHKCPTCPTCHKCPVPELLGGPSVFIF
PPKPKDILLISQNAKVTCVVVDVSEEEPDVQFSWFVNNVEVHTAQTQPREEQYN
STFRVVSALPIQHQQDWMSGKEFKCKVNNKALPSPIEKTISKPKGLVRKPKQVYVM
GPTEQLTEQTVSLTCLTSGFLPNDIGVEWTSNGHIEKNYKNTPEPVMDSGDSFF
MYSKLNVERSRWDSRAPFVCSVVHEGLHNHHVEKSISRPPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain constant region (143-475)

CDRH1 (45-54), CDRH2 (69-78), CDRH3 (118-131)

SEQ ID NO 40: Nucleotide sequence of 04-126 antibody heavy chain

ATGGAATGGAAGTGGGTCTTTCTCTTCCTCCTGTCAGTAAGTGCAGAAGTCCAC
TCCCAGGTCCAGCTGCGGCAGTCTGGAGCTGAGTTGGCTAAGCCTGGCTCTTC
AGTGAAGATTTCTGCAAGGCTTCTGGCTACACCTTCACCAGCTACTATATAATC
TGGATGAAACAGACGGCTGGCCAGGGCCTTCAGTATGTTGGATATATTAATCCG
GGAAGTGGACATACTAACTACAATGAGAAAGTTCAAGGGCAAGGCCACATTGAC
TGTAAGACAAATCCTCCAGCACAGCCTTCATGCAACTCAGCAGCCTGACACCTGA
CGACTCTGCGGTCTATTACTGTGCAAGAGGGACTGGGGGTTTTCTACGGATTAT
TAGTAAGTTTGATTACTGGGGCCAAGGAGTCATGGTCACAGTCTCCTCAGCCCA
AACAACAGCCCCATCTGTCTATCCACTGGCTCCTGGATGTGGTGATACAACCAG
CTCCACGGTGACTCTGGGATGCCTGGTCAAGGGCTATTTCCCTGAGCCAGTCA
CCGTGACCTGGAAGTCTGGAGCCCTGTCCAGCGATGTGCACACCTTTCCAGCT
GTCCTGCAGTCTGGGCTCTACACTCTCACCAGCTCAGTGACCTCCAGCACCTG
GCCCAGCCAGACCGTCACCTGCAACGTAGCCCAACCGGCCAGCAGCACCAAGG
TGGACAAGAAAGTTGAGCGCAGAAATGGCGGCATTGGACACAAATGCCCTACA
TGCCCTACATGTCAAAATGCCAGTTCTTGAAGTCTTGGGTGGACCATCTGTC
TTCATCTTCCCGCCAAAGCCCAAGGACATCCTCTTGATCTCCAGAACGCCAAG
GTCACGTGTGTGGTGGTGGATGTGAGCGAGGAGGAGCCGGACGTCCAGTTCA
GCTGGTTTTGTGAACAACGTAGAAGTACACACAGCTCAGACACAACCCCGTGAG
GAGCAGTACAACAGCACCTTCAGAGTGGTCAGTGCCCTCCCATCCAGCACCA
GGACTGGATGAGCGGCAAGGAGTTCAAATGCAAGGTCAACAACAAAGCCCTCC
CAAGCCCCATCGAGAAAACCATCTCAAAACCCAAAGGGCTAGTCAGAAAACCA
CAGGTATACGTCATGGGTCCACCGACAGAGCAGTTGACTGAGCAAACGGTCAG
TTTGACCTGCTTGACCTCAGGCTTCCTCCCTAACGACATCGGTGTGGAGTGGAC
CAGCAACGGGCATATAGAAAAGAACTACAAGAACACCGAGCCAGTGATGGACT
CTGACGGTTCTTTCTTCATGTACAGCAAGCTCAATGTGGAAAGGAGCAGGTGG
GATAGCAGAGCGCCCTTCGTCTGCTCCGTGGTCCACGAGGGTCTGCACAATCA
CCACGTGGAGAAGAGCATCTCCCGGCCTCCGGGTAAA

Signal sequence (1-57), heavy chain variable region (58-426), heavy chain constant region (427-1425)

CDRH1(133-162), CDRH2(205-234), CDRH3 (352-393)

[Figure 6]

SEQ ID NO 27: Amino acid sequence of 04-126 antibody light chain

METDRLLLWVLLLWVPGSTGDTVLTQSPALAVSLGQRVTISCRASKSVSTYMHW
YQQRSGQQPKLLIYSASTLESGVPSRFSGSGSGTDFTLTIDPVEADDIANYYCQQS
NELPYTFGAGTKLELKRADAAPTVSIFPPSTEQLATGGASVVCLMNNFYPRDISV
KWKIDGTERRDGVLDSDVDQDSKDYSTYSMSSTLSLTKADYESHNLYTCEVVHKT
SSSPVVKSFNRECE

Signal sequence (1-20), light chain variable region (21-128), light chain constant region (129-233)

CDRL1 (43-53), CDRL2 (69-75), CDRL3 (108-116)

SEQ ID NO 42: Nucleotide sequence of 04-126 antibody light chain

ATGGAGACAGACAGACTCCTGCTATGGGTGCTGCTGCTCTGGGTTCAGGCTC
CACTGGTGACTGTGCTGACCCAGTCTCCTGCTTTGGCTGTGTCTCTAGGGC
AGAGGGTCACCATCTCTTGTAGGGCCAGCAAAAGTGTCAGTACATATATGCACT
GGTACCAACAGAGGTCTGGGACAGCAACCCAACTCCTGATCTATAGTGCTTCCA
CCCTAGAATCTGGAGTCCCTTCCAGGTTTCAGTGGGAGTGGGTCTGGGACAGAC
TTTACCCTCACCATAGATCCTGTGGAGGCTGATGACATAGCAAATATTACTGTC
AGCAGAGTAATGAACTTCCGTACACGTTTGGAGCTGGGACCAAGCTGGAAGT
AAACGGGCTGATGCTGCACCAACTGTATCTATCTTCCCACCATCCACGGAACAG
TTAGCAACTGGAGGTGCCTCAGTCGTGTGCCTCATGAACAACTTCTATCCCAGA
GACATCAGTGTCAAGTGGAAGATTGATGGCACTGAACGACGAGATGGTGTCTCT
GGACAGTGTACTGATCAGGACAGCAAAGACAGCACGTACAGCATGAGCAGCA
CCCTCTCGTTGACCAAGGCTGACTATGAAAGTCATAACCTCTATACCTGTGAGG
TTGTTTCATAAGACATCATCCTCACCCGTCGTCAAGAGCTTCAACAGGAATGAGT
GT

Signal sequence (1-60), light chain variable region (61-384), light chain constant region (385-699)

CDRL1(127-159), CDRL2(205-225), CDRL3 (322-348)

[Figure 7]

SEQ ID NO 44: Amino acid sequence of 04-046Ch antibody heavy chain

MKHLWFFLLLVAAAPRWVLSQVQLQQSGAELAKPGSSVKISCKASGYTFTSY
ISWIKQTTGQGLKYIGFINPGSGHTNYNEKFKGKATLTVDKSSSTAFMQLSS
LTPDDSAIYYCARGAGGFLRIITKFDYWGGQVMVTVSSASTKGPSVFPLAPSS
KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSV
VTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGG
PSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAK
TKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK
GQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY
KTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFSVMSHEALHNHYTQKSLS
LSPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain constant region (143-472)

SEQ ID NO 46: Nucleotide sequence of 04-046Ch antibody heavy chain

ATGAAACACCTGTGGTTCTTCCTCCTGCTGGTGGCAGCTCCCAGATGGGTG
CTGAGCCAGGTGCAGCTGCAGCAGTCTGGCGCCGAACCTGGCCAAGCCTGG
CAGCAGCGTGAAGATCAGCTGCAAGGCCAGCGGCTACACCTTCACCAGCTA
CTACATCAGCTGGATCAAGCAGACCACCGGCCAGGGCCTGAAGTACATCGG
CTTCATCAACCCCGGCAGCGGCCACACCAACTACAACGAGAAGTTCAAGGG
CAAGGCCACCCTGACCGTGGACAAGAGCAGCAGCACCAGCCTTCATGCAGC
TGTCCAGCCTGACCCCGACGACAGCGCCATCTACTACTGTGCTAGAGGCG
CTGGCGGCTTCCTGCGGATCATCACCAAGTTCGACTACTGGGGCCAGGGCG
TGATGGTCACCGTCAGCTCAGCCTCCACCAAGGGCCCAAGCGTCTTCCCCC
TGGCACCCCTCCTCCAAGAGCACCTCTGGCGGCACAGCCGCCCTGGGCTGC
CTGGTCAAGGACTACTTCCCCGAACCCGTGACCGTGAGCTGGAACCTCAGGC
GCCCTGACCAGCGGCGTGCACACCTTCCCCGCTGTCCTGCAGTCCTCAGGA
CTCTACTCCCTCAGCAGCGTGGTGACCGTGCCCTCCAGCAGCTTGGGCACC
CAGACCTACATCTGCAACGTGAATCACAAGCCCAGCAACACCAAGGTGGAC
AAGAGAGTTGAGCCCAAATCTTGTGACAAAACCTCACACATGCCACCCCTGC
CCAGCACCTGAACTCCTGGGGGGACCCCTCAGTCTTCCTCTTCCCCCCTG
CCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTACATGCGTGGTG
GTGGACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGA
CGGCGTGGAGGTGCATAATGCCAAGACAAAGCCCCGGGAGGAGCAGTACA
ACAGCACGTACCGGGTGGTCAGCGTCCTCACCGTCCTGCACCAGGACTGG
CTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCCAGCC
CCCATCGAGAAAACCATCTCCAAAGCCAAAGGCCAGCCCCGGGAACCACA
GGTGTACACCCTGCCCCCATCCCGGGAGGAGATGACCAAGAACCAGGTCA
GCCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGT
GGGAGAGCAATGGCCAGCCCGAGAACAACCTACAAGACCACCCCTCCCGTG
CTGGACTCCGACGGCTCCTTCTTCCTCTACAGCAAGCTCACCGTGGACAAG
AGCAGGTGGCAGCAGGGCAACGTCTTCTCATGCTCCGTGATGCATGAGGCT
CTGCACAACCACTACACCCAGAAGAGCCTCTCCCTGTCTCCCGGCAA

Signal sequence (1-57), heavy chain variable region (58-426), heavy chain constant region (427-1416)

[Figure 8]

SEQ ID NO 45: Amino acid sequence of 04-046Ch antibody light chain

MVLQTQVFISLLWISGAYGDTVLTQSPALAVSLGQRVTISCRASKSVS
 TYIHWYQQRSGQQPKLLIYSASNLESGVPSRFSGSGSGTDFTLTIDPV
 EPDDIANYYCQQINELPYTFGAGTKLELKRAVAAPSVFIFPPSDEQLKS
 GTASVVCLLNNFYPPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY
 SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Signal sequence (1-20), light chain variable region (21-128), light chain
 constant region (129-233)

SEQ ID NO 47: Nucleotide sequence of 04-046Ch antibody light chain

ATGGTGCTGCAGACCCAGGTGTTTCATCTCCCTGCTGCTGTGGATCTC
 CGGCGCGTACGGCGATACCGTGCTGACACAGTCTCCAGCCCTGGCC
 GTGTCCCTGGGCCAGAGAGTGACCATCAGCTGCAGAGCCAGCAAGA
 GCGTGTCACCTACATCCACTGGTATCAGCAGCGGAGCGGCCAGCA
 GCCCAAGCTGCTGATCTACAGCGCCAGCAACCTGGAAAGCGGCGTG
 CCCAGCAGATTTTCCGGCAGCGGCTCTGGCACCGACTTCACCCTGAC
 CATCGACCCCGTGGAACCCGACGATATCGCCAACTACTACTGCCAGC
 AGATCAACGAGCTGCCCTACACCTTCGGAGCCGGCACCAAGCTGGA
 ACTGAAGAGAGCCGTGGCCGCCCCCTCCGTGTTTCATCTTCCCCCCT
 CCGACGAGCAGCTGAAGTCCGGCACCGCCTCCGTGGTGTGCCTGCT
 GAATAACTTCTACCCCAGAGAGGCCAAGGTGCAGTGGAAGGTGGAC
 AACGCCCTGCAGTCCGGGAACTCCCAGGAGAGCGTGACCGAGCAGG
 ACAGCAAGGACAGCACCTACAGCCTGAGCAGCACCTGACCCTGAG
 CAAAGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGAGGTGACC
 CACCAGGGCCTGAGCTCCCCCGTCACCAAGAGCTTCAACAGGGGGG
 AGTGT

Signal sequence (1-60), light chain variable region (61-384), light chain
 constant region (385-699)

[Figure 9]

SEQ ID NO 48: Amino acid sequence of humanized h046-H4b

MKHLWFFLLLVAAPRWVLSQVQLVQSGAEVKKPGASVKVSCKASGY
 TFTSYIISWIRQAPGQGLKYMGINPGSGHTNYNEKFKGRVTITADKS
 SSTATMELSSLRSEDVAVYYCARGAGGFLRIITKFDYWGGTGLVTVSS
 ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTS
 GVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDK
 RVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTC
 VVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLT
 VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS
 REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSD
 GSFFLYSKLTVDKSRWQQGNVFSVMSMHEALHNHYTQKSLSLSPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain
 constant region (143-472)

[Figure 10]

SEQ ID NO 50: Amino acid sequence of humanized h046-H4e

MKHLWFFLLLVAAPRWVLSEVQLVQSGAEVKKPGASVKVSCKASGY
 TFTSYIISWIRQAPGQGLKYMGINPGSGHTNYNEKFKGRVTITADKS
 SSTATMELSSLRSEDVAVYYCARGAGGFLRIITKFDYWGGTGLVTVSS
 ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTS
 GVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDK
 RVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTC
 VVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLT
 VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS
 REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSD
 GSFFLYSKLTVDKSRWQQGNVFSVMSMHEALHNHYTQKSLSLSPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain
 constant region (143-472)

[Figure 11]

SEQ ID NO 52: Amino acid sequence of humanized h046-H5b

MKHLWFFLLLVAAPRWVLSQVQLVQSGAEVKKPGASVKVSCKASGYTFTS
 YYISWIRQAPGQGLKYMGINPGSGHTNYNEKFKGRVTITADKSSSTANME
 LSSLRSEDTAVYYCARGAGGFLRIITKFDYWGQGTLLTVSSASTKGPSVFP
 LAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS
 GLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCPP
 CPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYV
 DGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKAL
 PAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVE
 WESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMH
 EALHNHYTQKSLSLSPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain
 constant region (143-472)

[Figure 12]

SEQ ID NO 54: Amino acid sequence of humanized h046-H8

MKHLWFFLLLVAAPRWVLSQVQLQQSGAELAKPGSSVKISCKASGYT
 FTSYYISWIKQTTGQGLKYIGFINPGSGHTNYNEKFKGKATLTVDKSS
 STANMQLSSLTPDDSAIYYCARGAGGFLRIITKFDYWGQGVMTVSSA
 STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSG
 VHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKR
 VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV
 VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTV
 LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR
 EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSD
 GSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain
 constant region (143-472)

[Figure 13]

SEQ ID NO 56: Amino acid sequence of humanized h046-H10

MKHLWFFLLLVAAPRWVLSQVQLQQSGAELAKPGSSVKVSCKASGY
 TFTSYIISWIKQTTGQGLKYIGFINPGSGHTNYNEKFKGKATLTVDKS
 SSTANMQLSSLTPDDSAIYYCARGAGGFLRIITKFDYWGQGVMVTVSS
 ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTS
 GVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDK
 RVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTC
 VVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLT
 VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS
 REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSD
 GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK

Signal sequence (1-19), heavy chain variable region (20-142), heavy chain constant region (143-472)

[Figure 14]

SEQ ID NO 58: Amino acid sequence of humanized h046-L1

MVLQTQVFISLLLWISGAYGDIQMTQSPSSLSASVGDRVTITCRASKSV
 STYIHWYQQKPGKAPKLLIYSASNLESGVPSRFSGSGSGTDFTLTISL
 QPEDFATYYCQQINELPYTFGGQGTKVEIKRTVAAPSVFIFPPSDEQLK
 SGTASVCLLNFFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST
 YLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Signal sequence (1-20), light chain variable region (21-129), light chain constant region (130-234)

[Figure 15]

SEQ ID NO 60: Amino acid sequence of humanized h046-L2

MVLQTQVFISLLLWISGAYGDIQMTQSPSSLSASVGDRVTITCRASKSV
 STYIHWYQQKPGKAPKLLIYSASNLESGVPSRFSGSGSGTDFTLTISL
 QPEDFATYYCQQINELPYTFGGQGTKVEIKRTVAAPSVFIFPPSDEQLK
 SGTASVCLLNFFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST
 YLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Signal sequence (1-20), light chain variable region (21-129), light chain constant region (130-234)

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[Figure 16]

SEQ ID NO 62: Amino acid sequence of humanized h046-L6

MVLQTQVFISLLLWISGAYGDTQLTQSPSSLSASVGDRVTITCRASKSV
STYIHWYQQKPGKQPKLLIYSASDRESGVPSRFSGSGSGTDFTLTISL
QPEDFANYYCQQINELPYTFGQGTKVEIKRTVAAPSVFIFPPSDEQLK
SGTASVVCLLNFPYPREAKVQWKVDNALQSGNSQESVTEQDSKDST
YLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Signal sequence (1-20), light chain variable region (21-129), light chain
constant region (130-234)

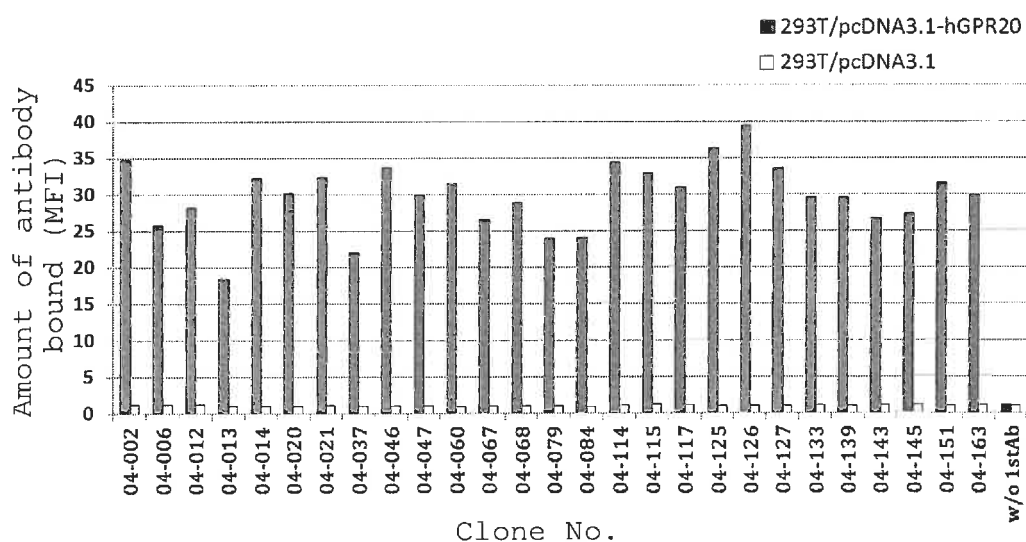
[Figure 17]

SEQ ID NO 64: Amino acid sequence of humanized h046-L7

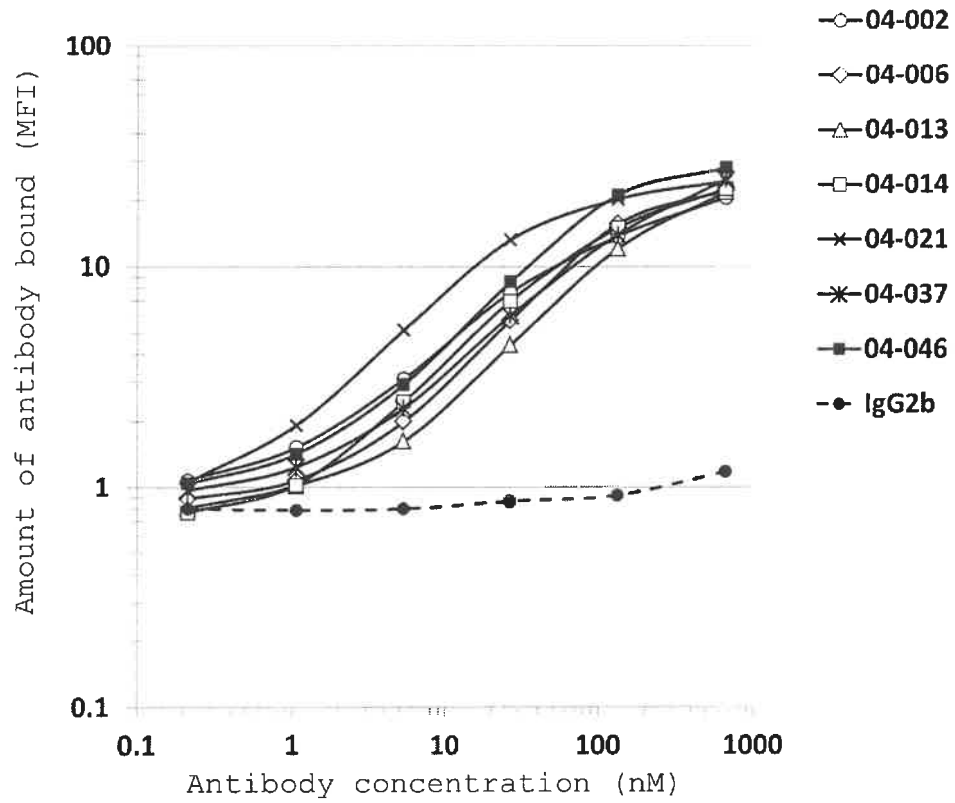
MVLQTQVFISLLLWISGAYGDTQLTQSPSSLSASVGDRVTITCRASKSV
STYIHWYQQKPGKQPKLLIYSAGNLESGVPSRFSGSGSGTDFTLTISL
QPEDFANYYCQQINELPYTFGQGTKVEIKRTVAAPSVFIFPPSDEQLK
SGTASVVCLLNFPYPREAKVQWKVDNALQSGNSQESVTEQDSKDST
YLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Signal sequence (1-20), light chain variable region (21-129), light chain
constant region (130-234)

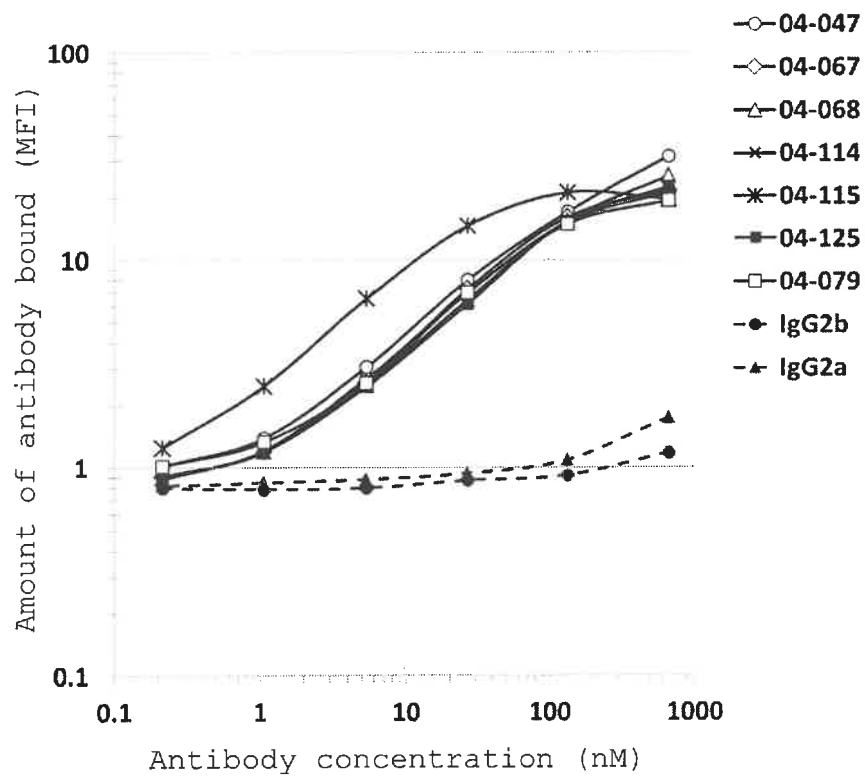
[Figure 18]



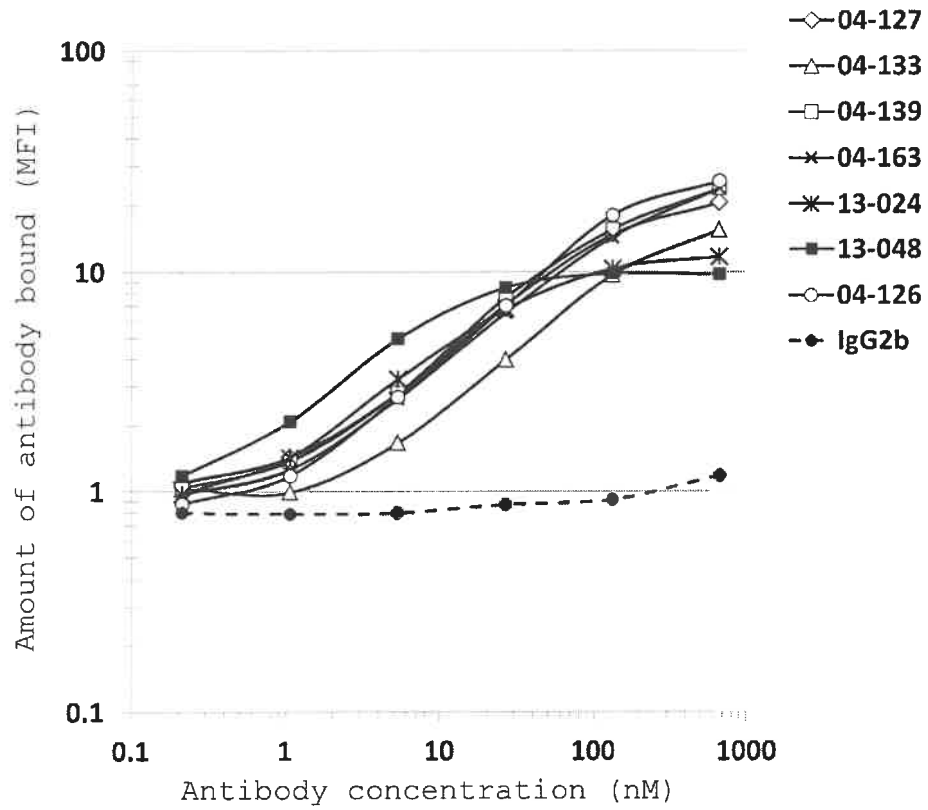
[Figure 19-1]



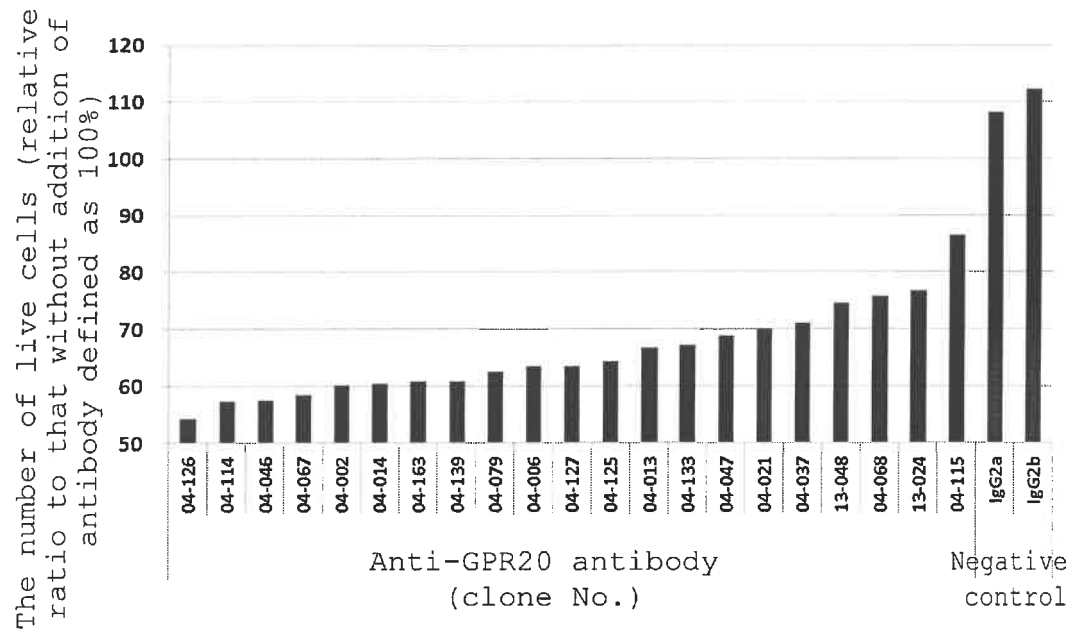
[Figure 19-2]



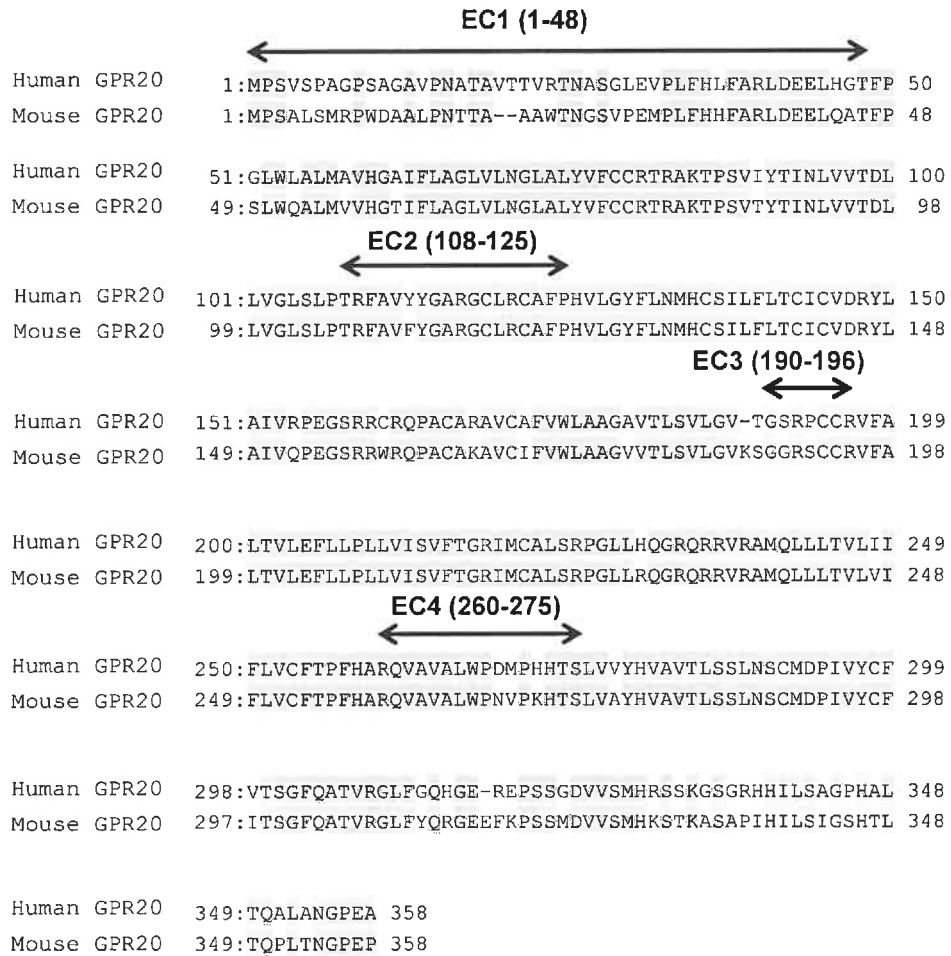
[Figure 19-3]



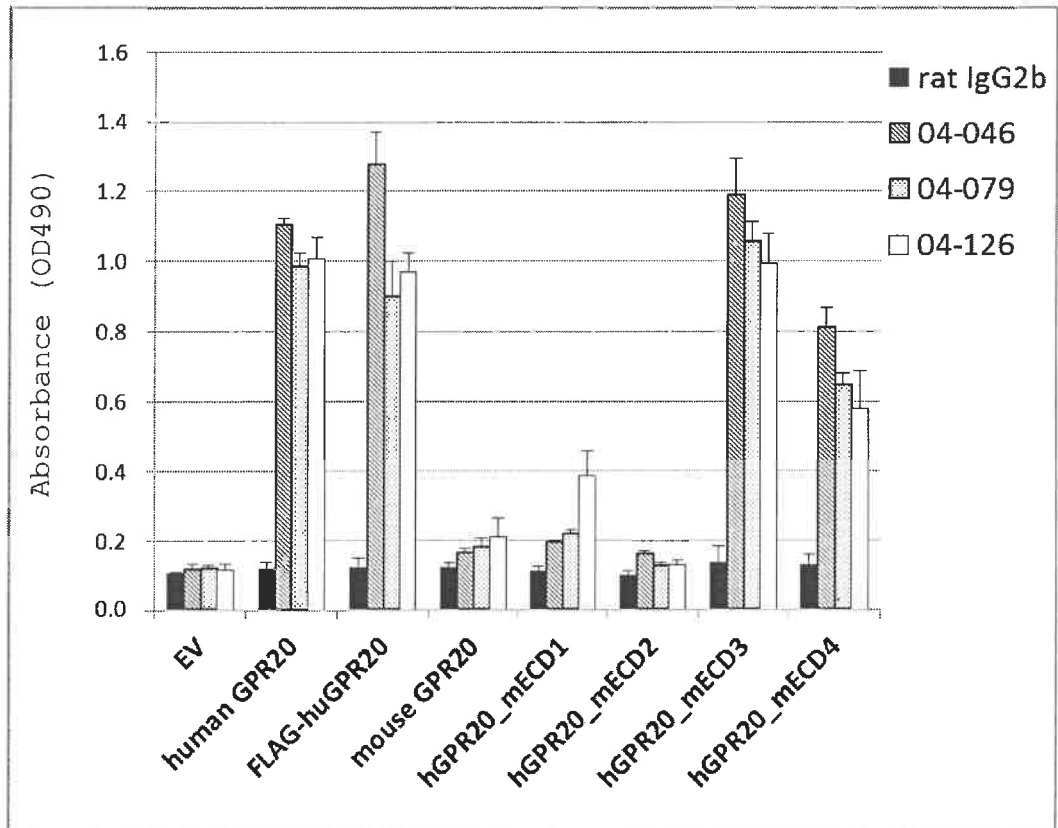
[Figure 20]



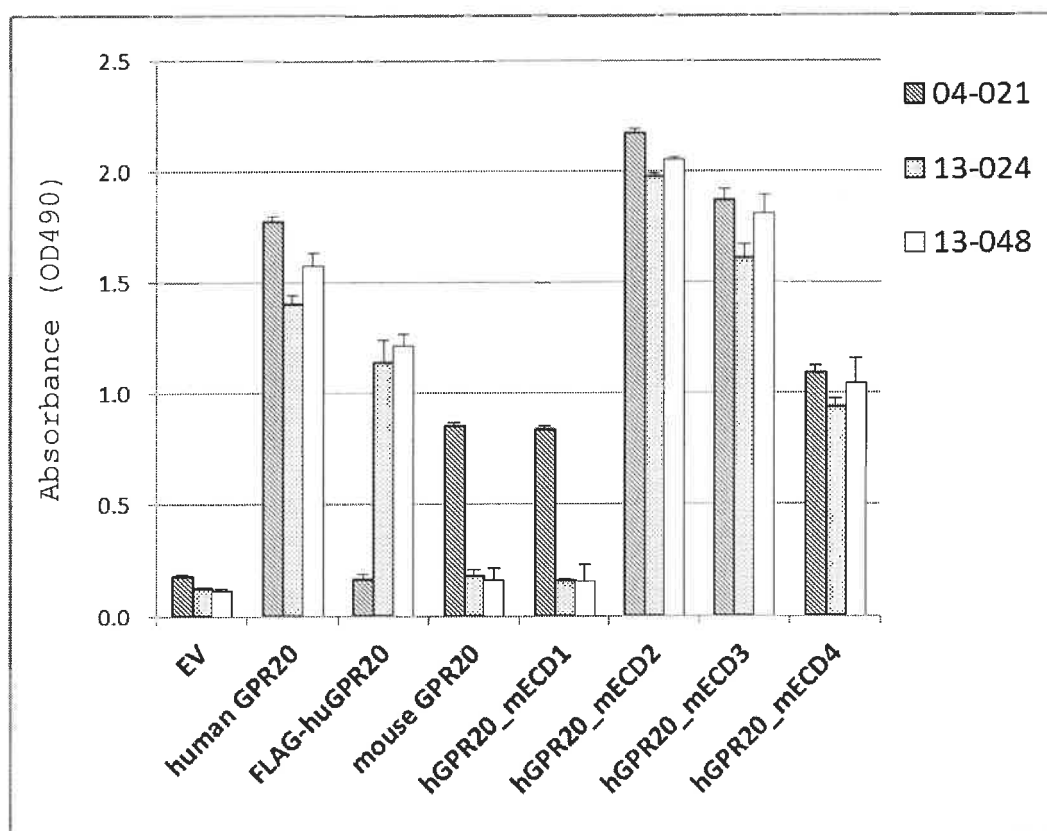
[Figure 21]



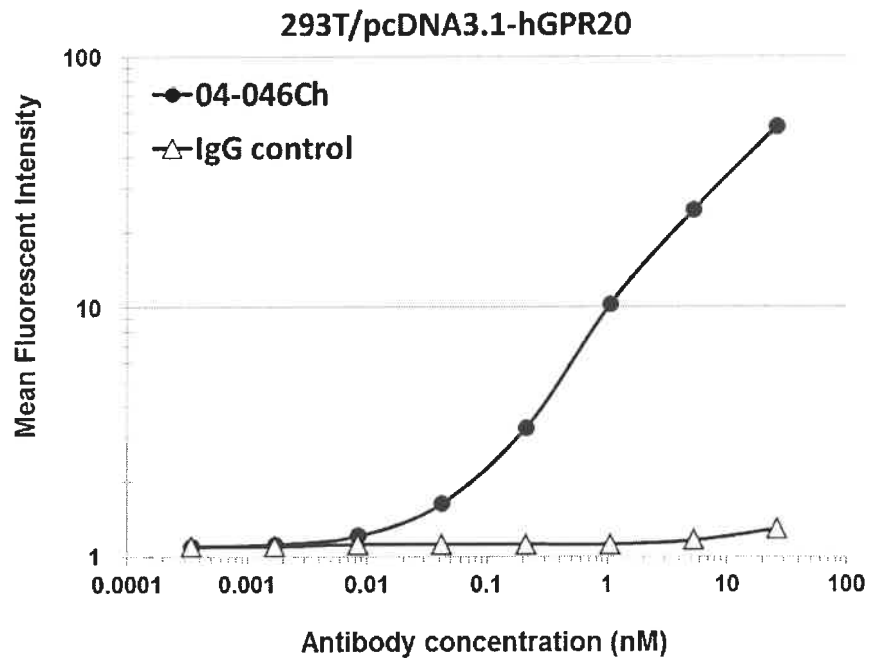
[Figure 22-a]



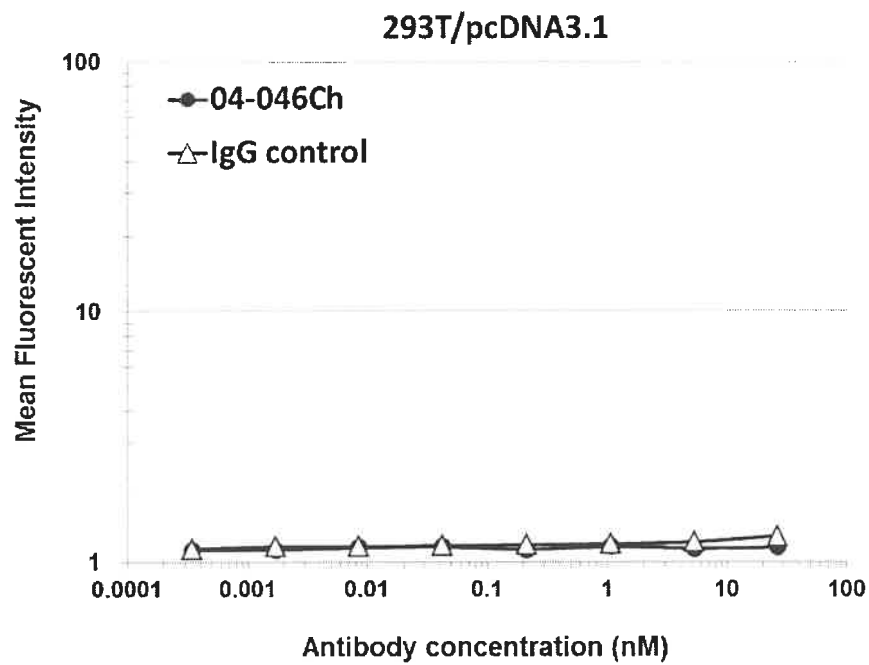
[Figure 22-b]



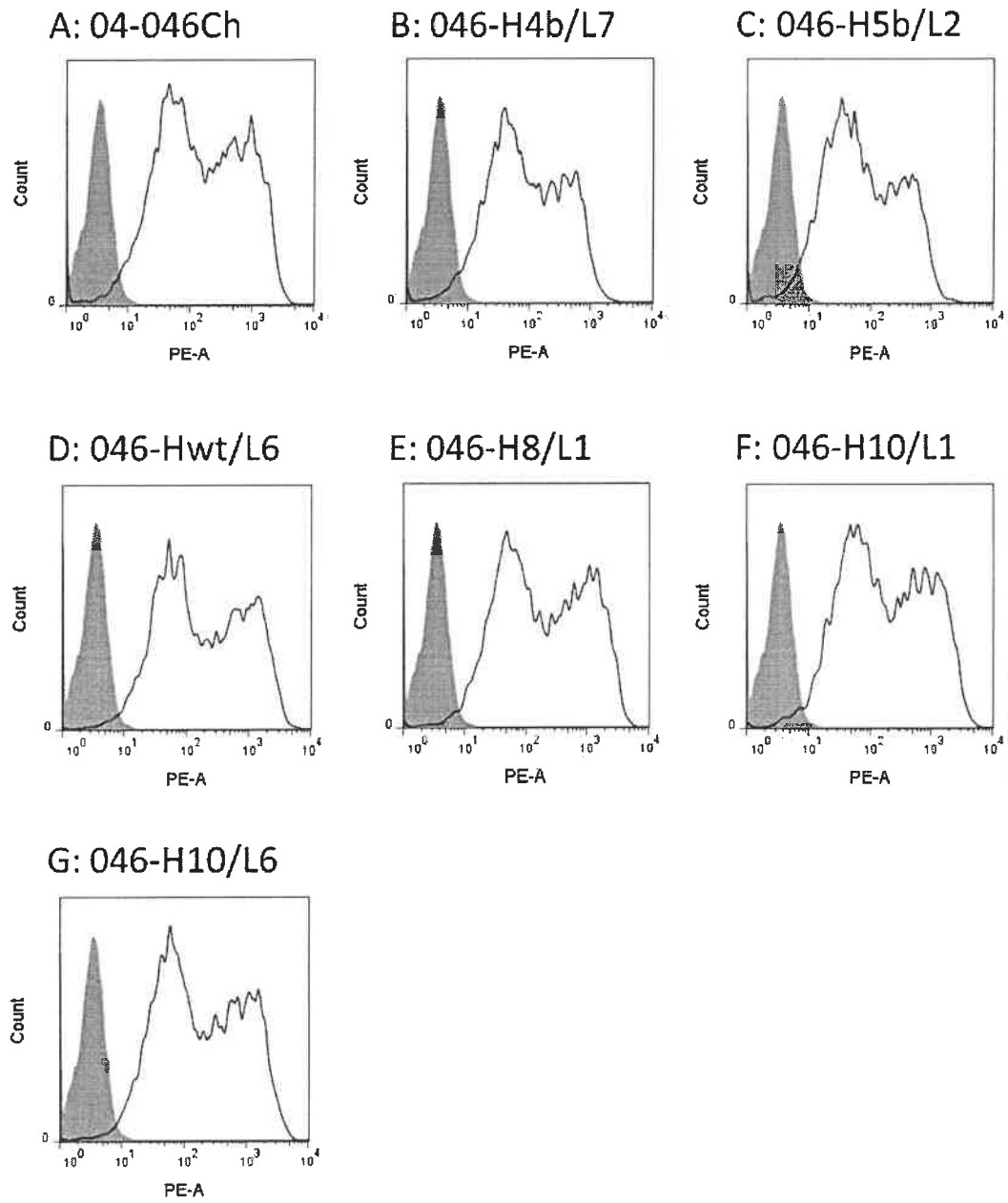
[Figure 23-a]



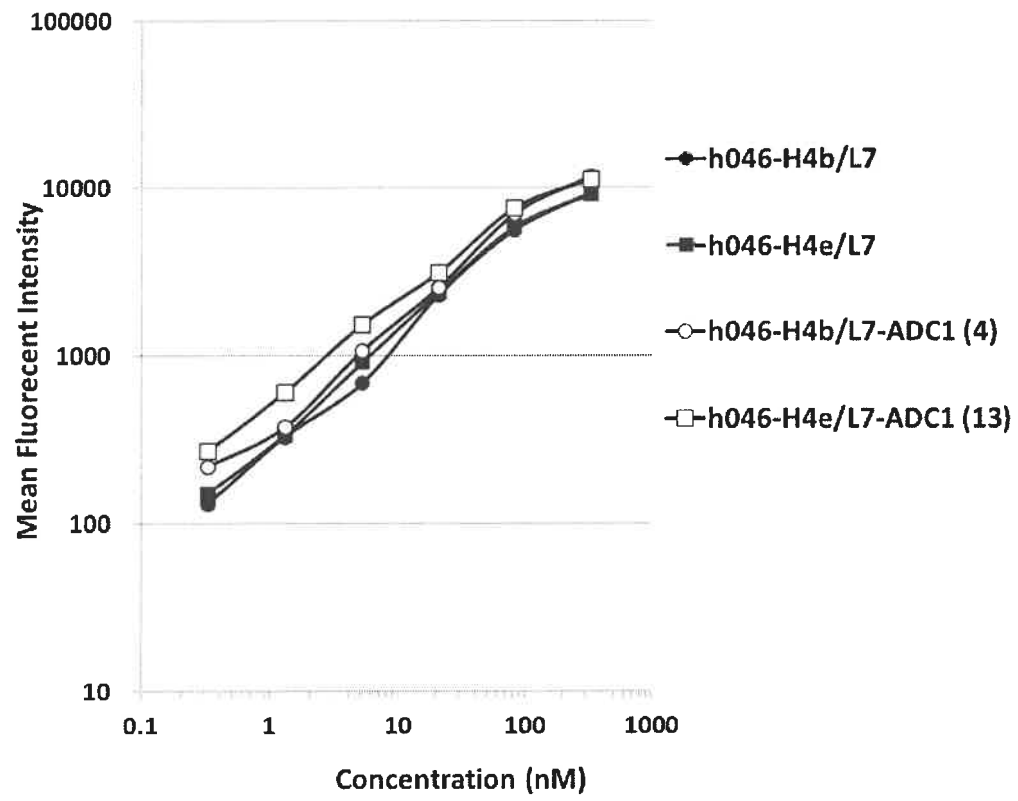
[Figure 23-b]



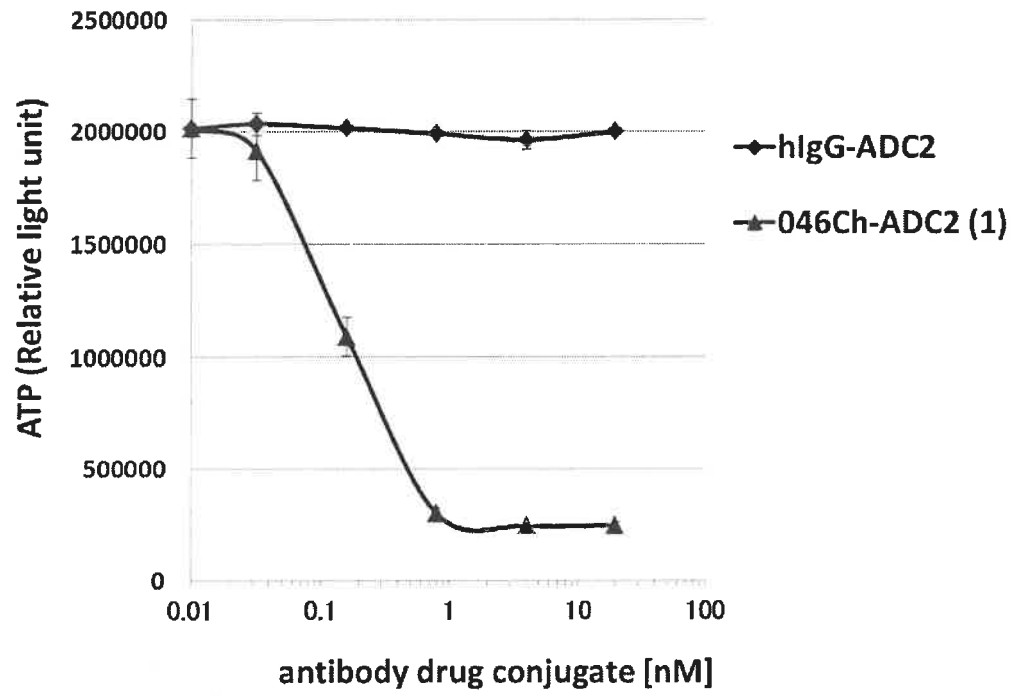
[Figure 24]



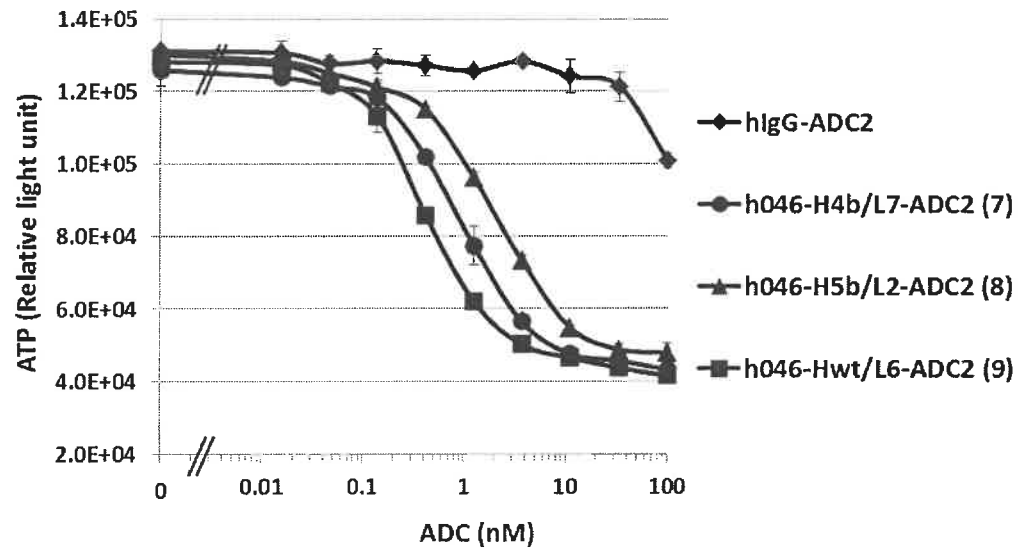
[Figure 25]



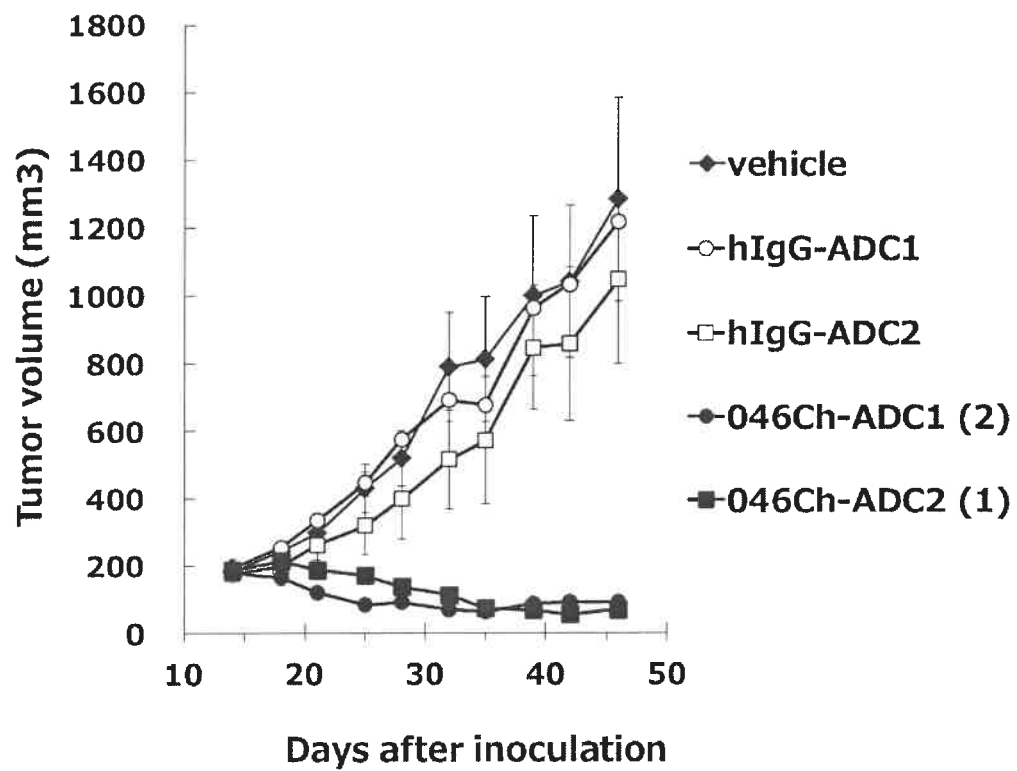
[Figure 26]



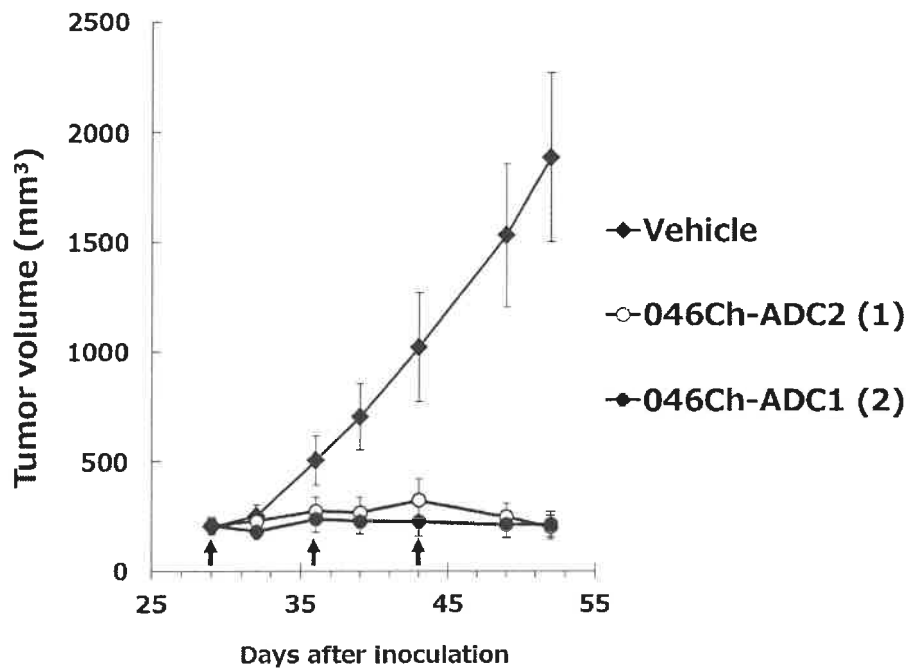
[Figure 27]



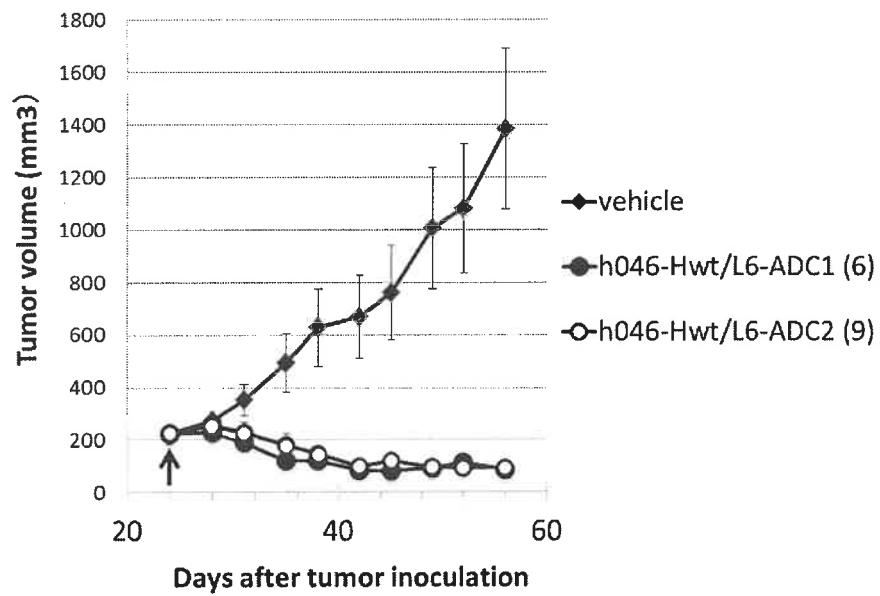
[Figure 28]



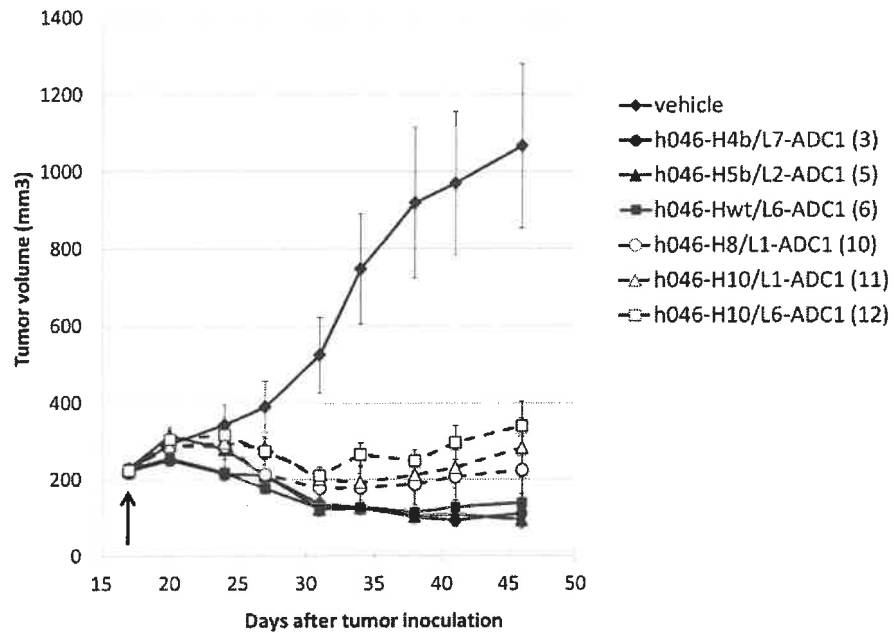
[Figure 29]



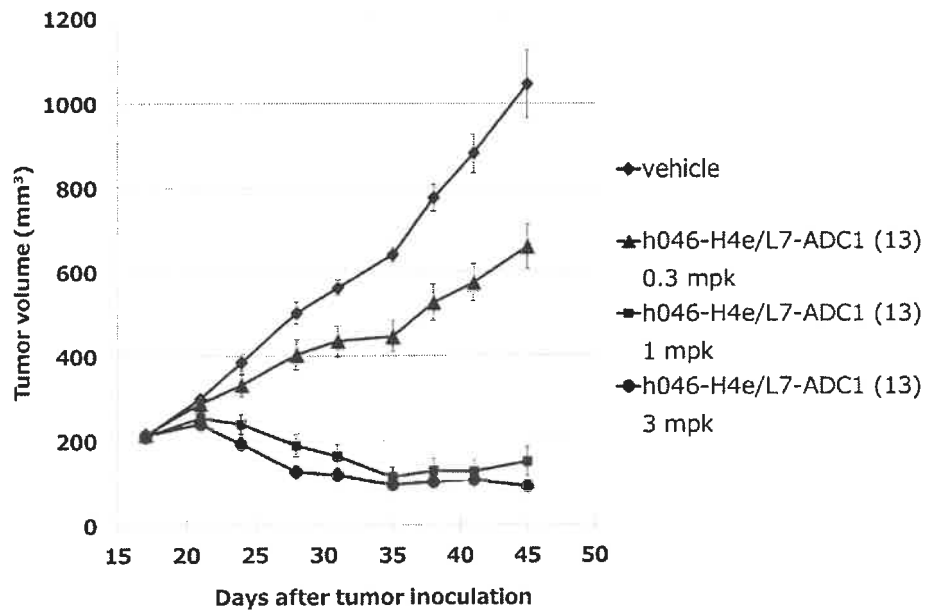
[Figure 30]



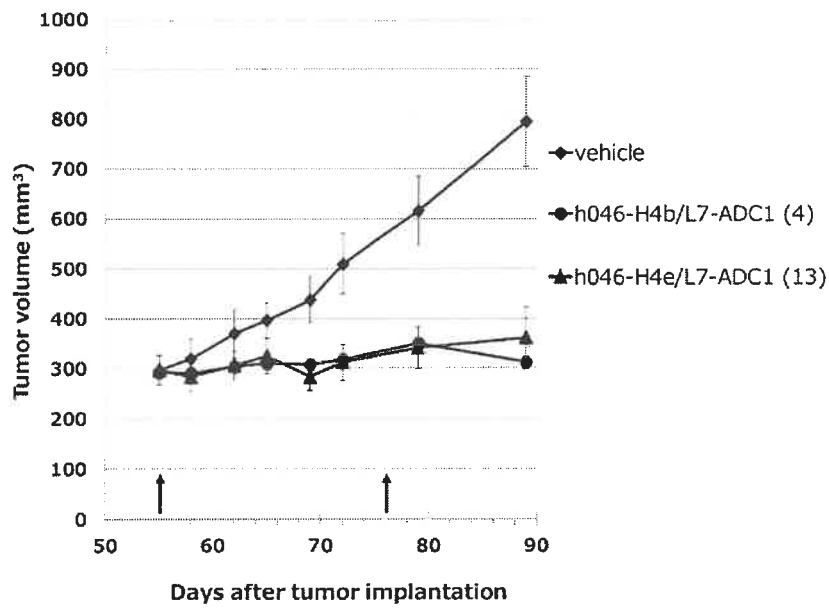
[Figure 31]



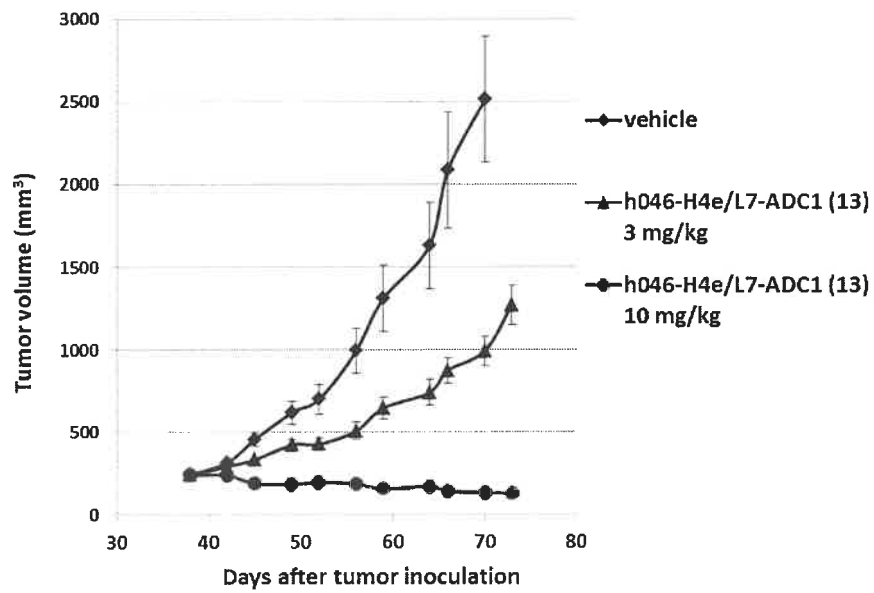
[Figure 32]



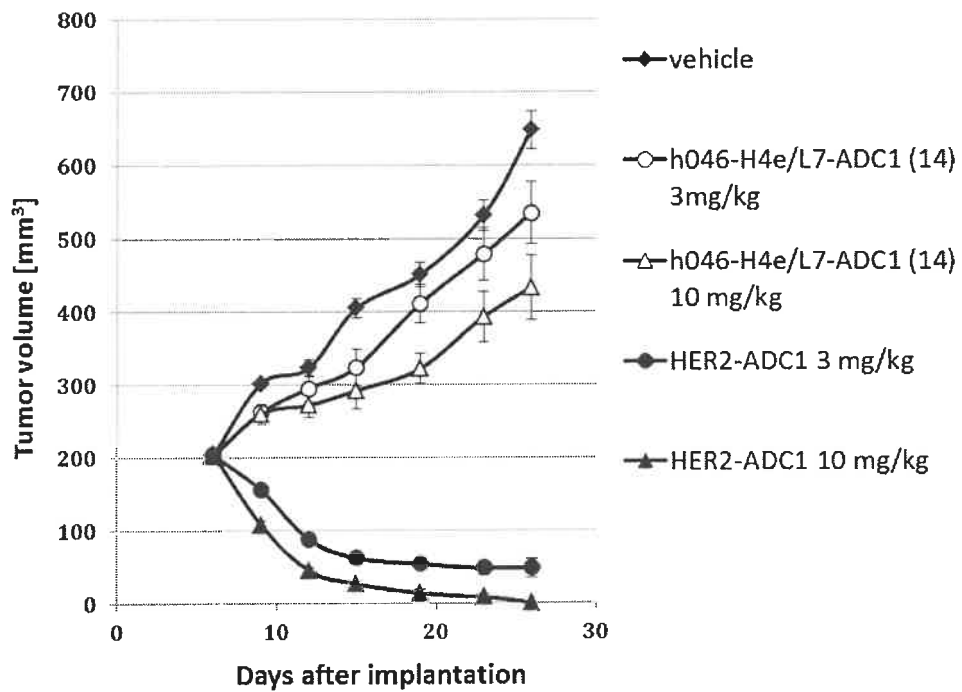
[Figure 33]



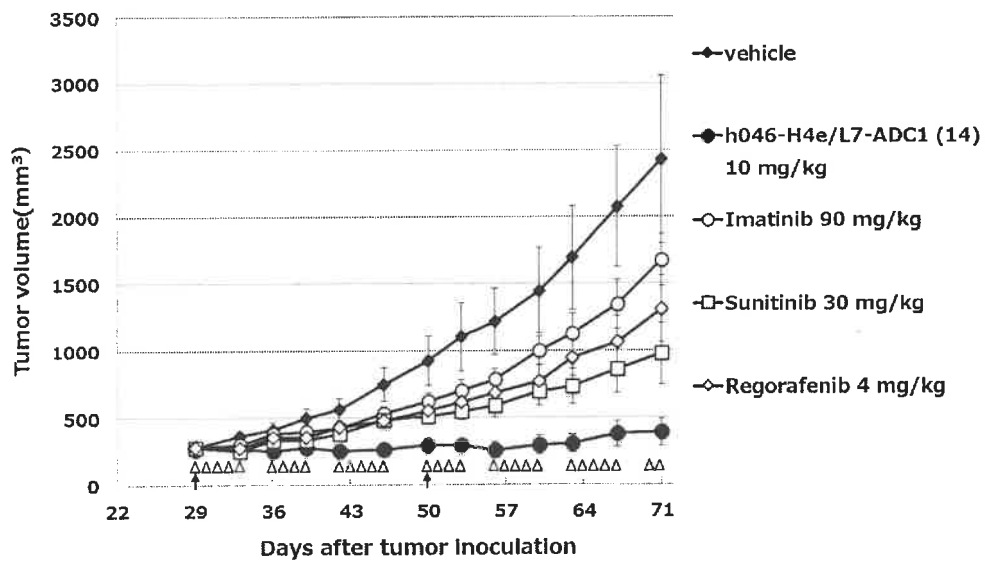
[Figure 34]



[Figure 35]



[Figure 36]



[Figure 37]

