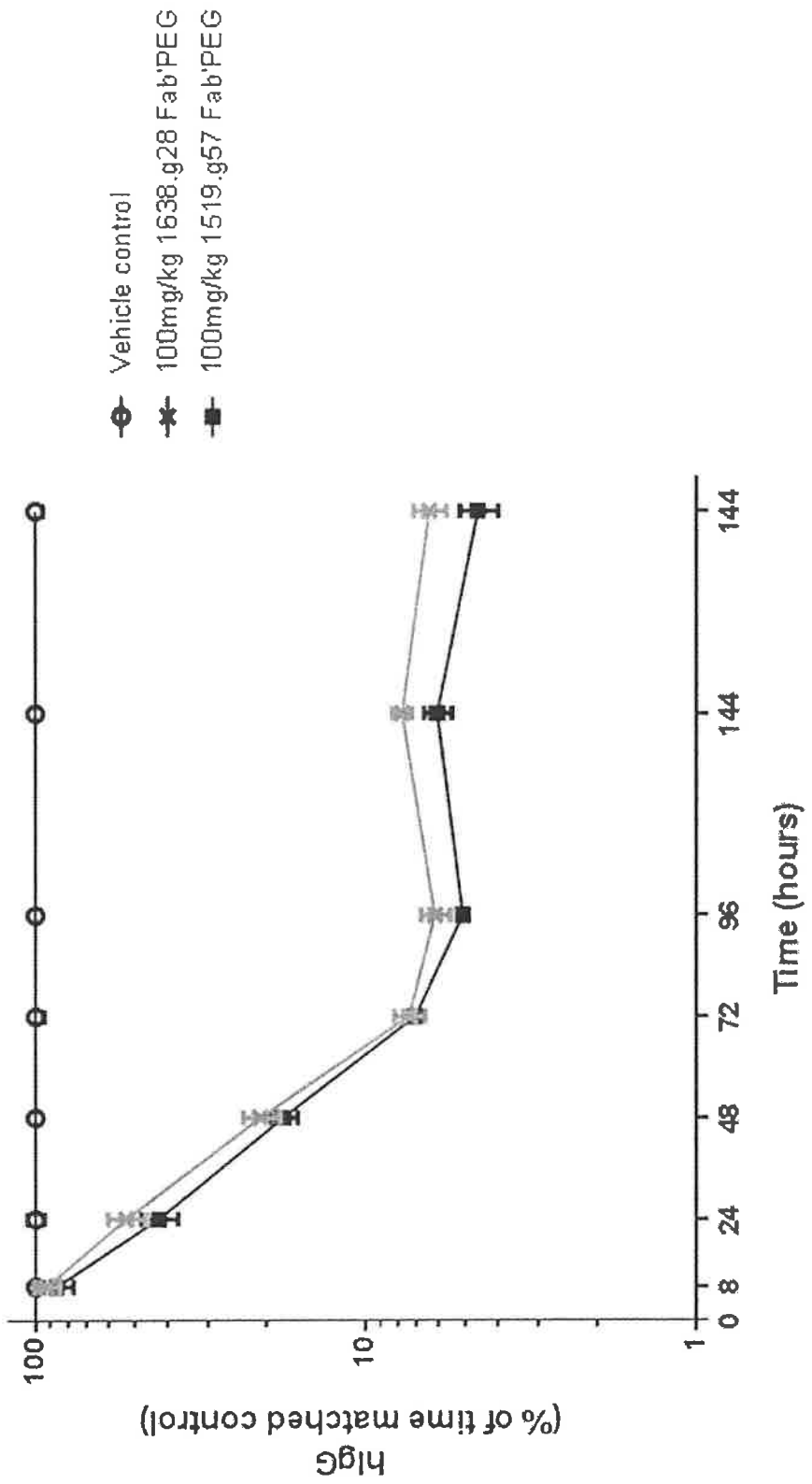

Vehicle control
100mg/kg 1638.g28 Fab'PEG
100mg/kg 1519.g57 Fab'PEG
hIgG
(% of time matched control)
100
10
1
0
8
24
48
72
96
144
144
Time (hours)

Figure 1

Figure 1a The effect of 1638 IgG4P format on the concentration of human IVIg in serum of human FcRn-transgenic mice.

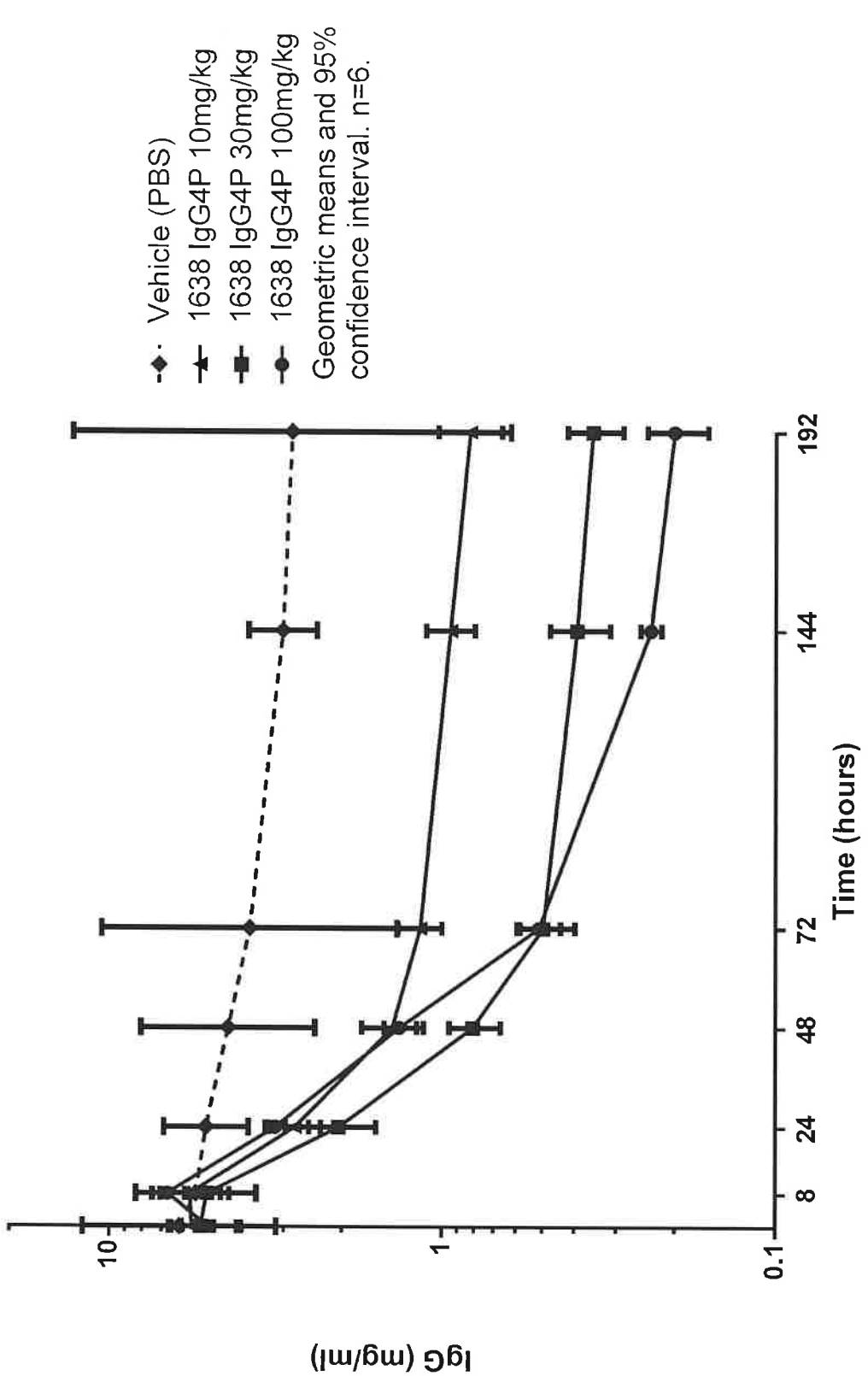
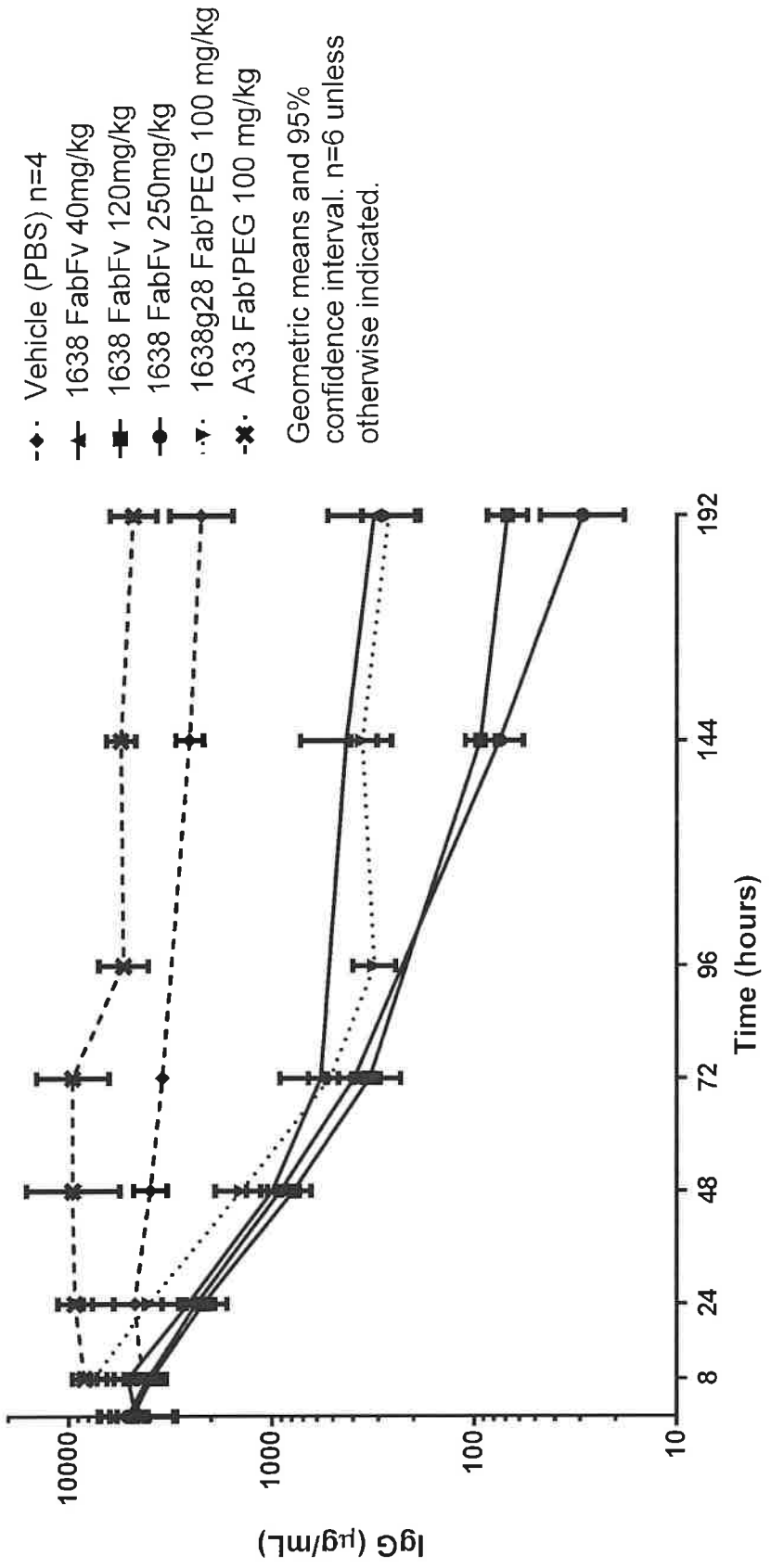


Figure 1b The effect of 1638 FabFv and Fab'PEG formats on the concentration of human IVIg in human FcRn-transgenic mice.



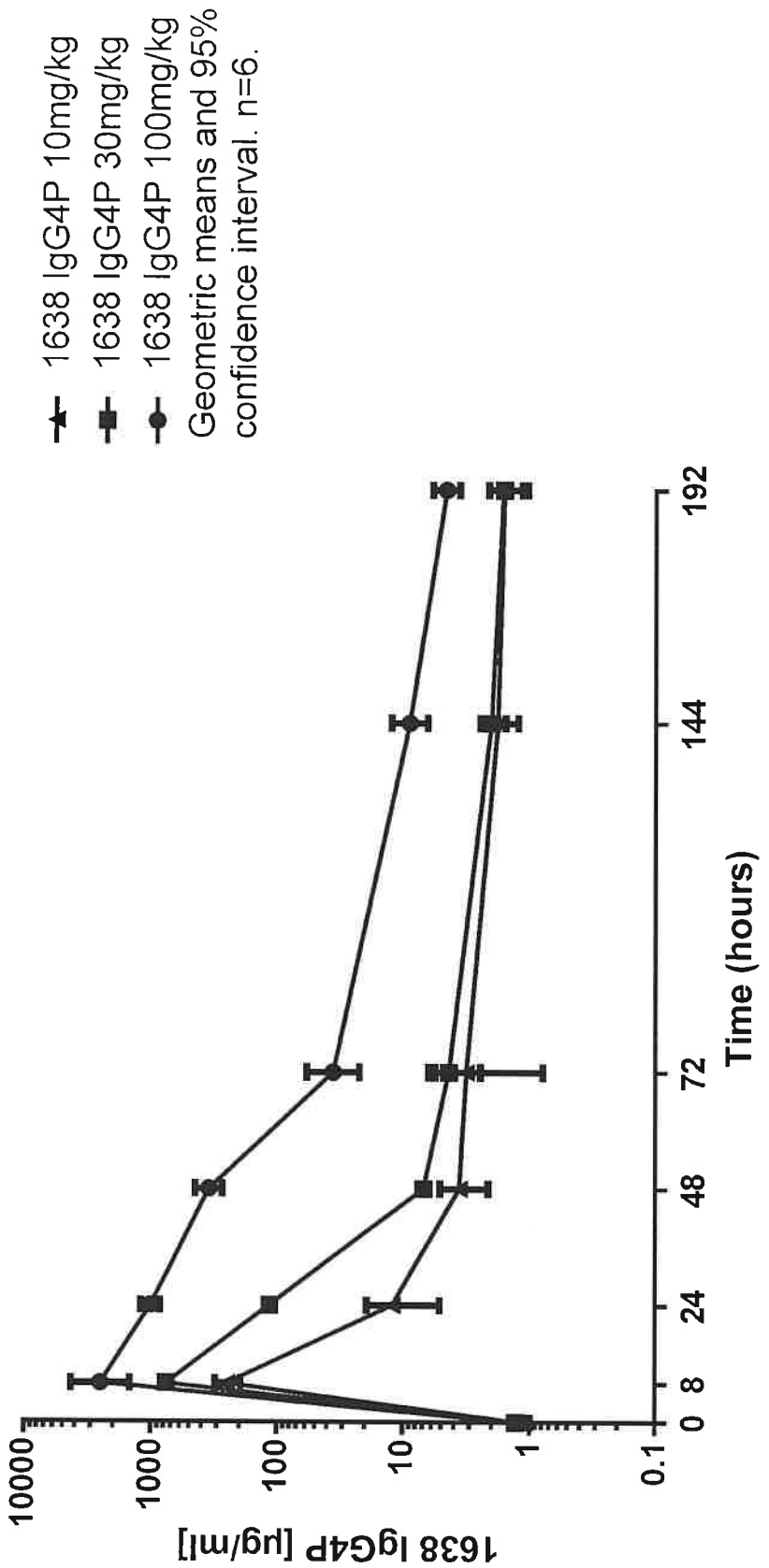


Figure 1c The pharmacokinetics of 1638 IgG4P format in human FcRn-transgenic mice.

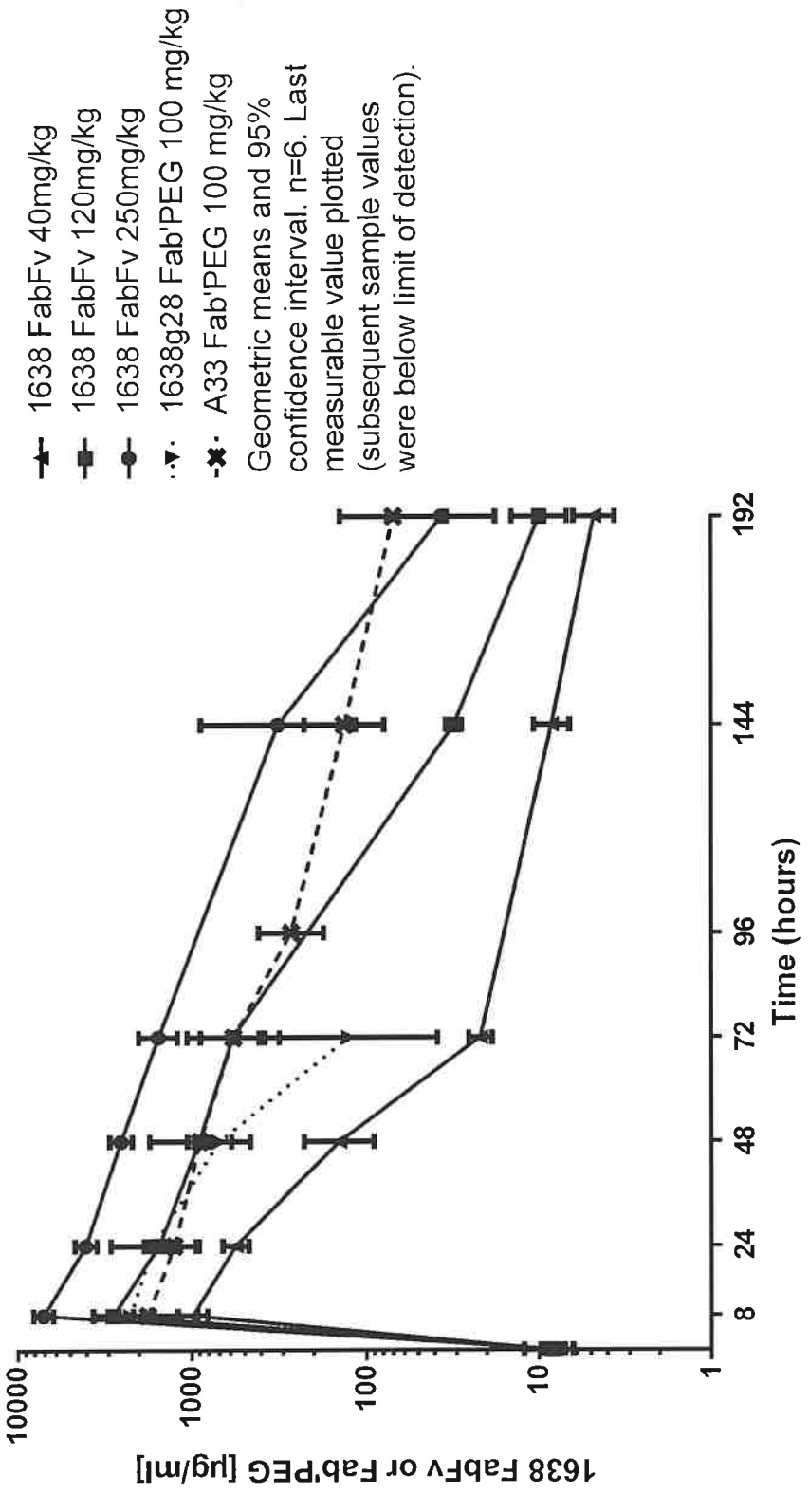


Figure 1d The pharmacokinetics of 1638 FabFv and Fab'PEG formats in human FcRn-transgenic mice.

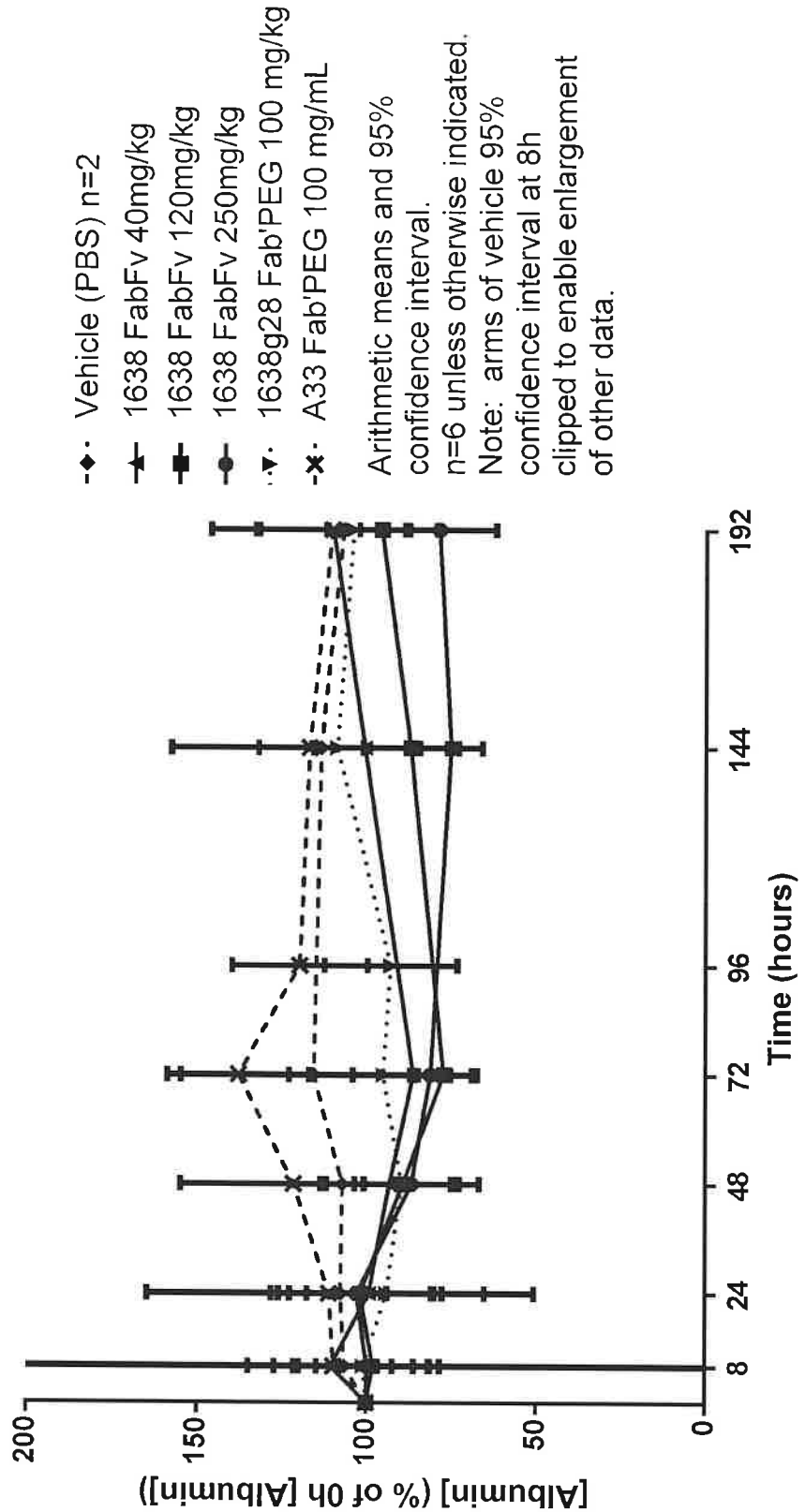


Figure 1e The effect of 1638 FabFv and Fab'PEG formats on the concentration of serum albumin in human FcRn-transgenic mice.

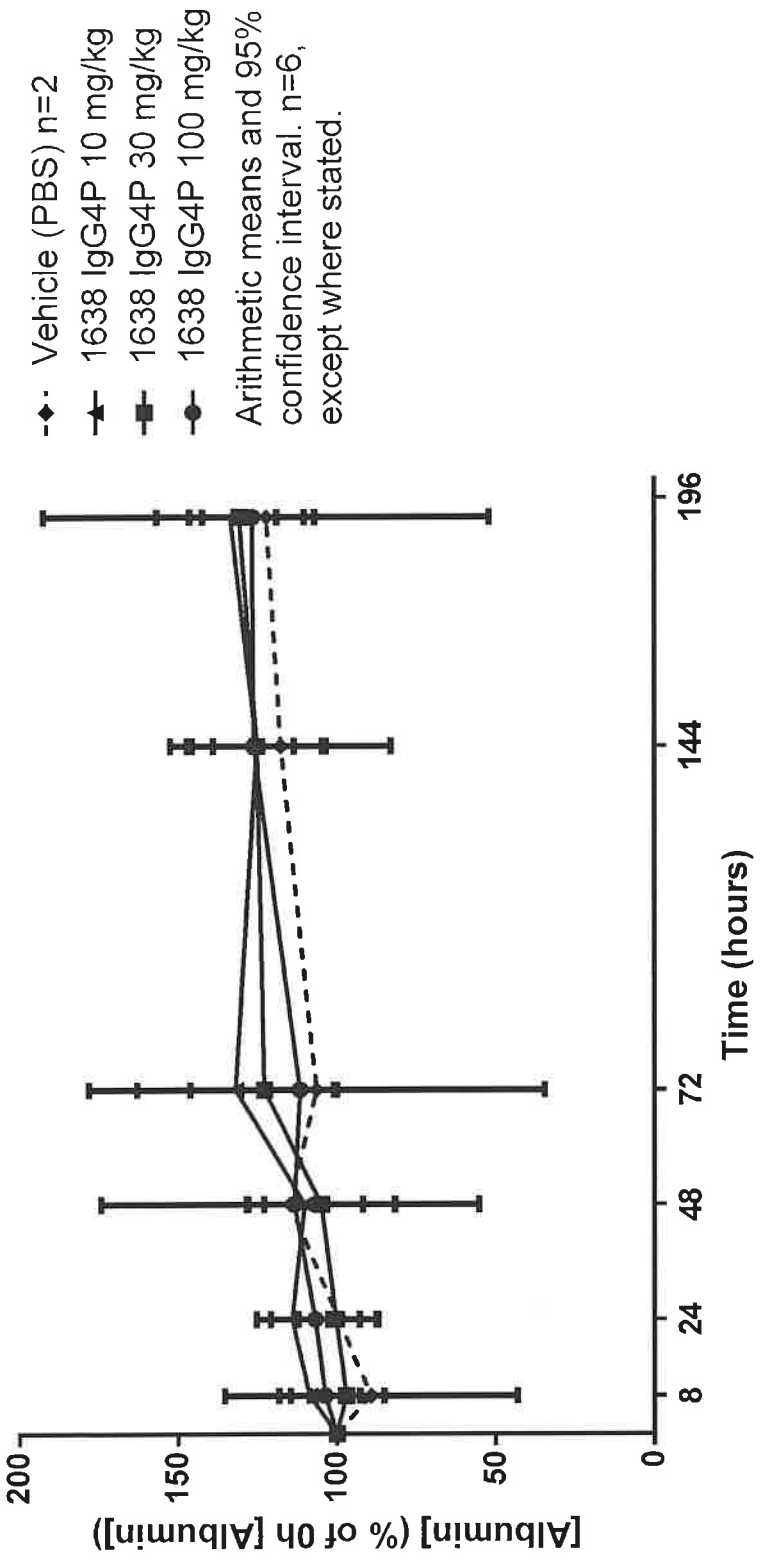


Figure 1f The effect of 1638 IgG4P format on the concentration of serum albumin in human FcRn-transgenic mice.

Figure 2 shows representative binding curves for CA170_1638.g49 IgG4. The mean K_D values (n = 3) were 0.20 in neutral buffer, & 0.22 in acidic buffer, respectively

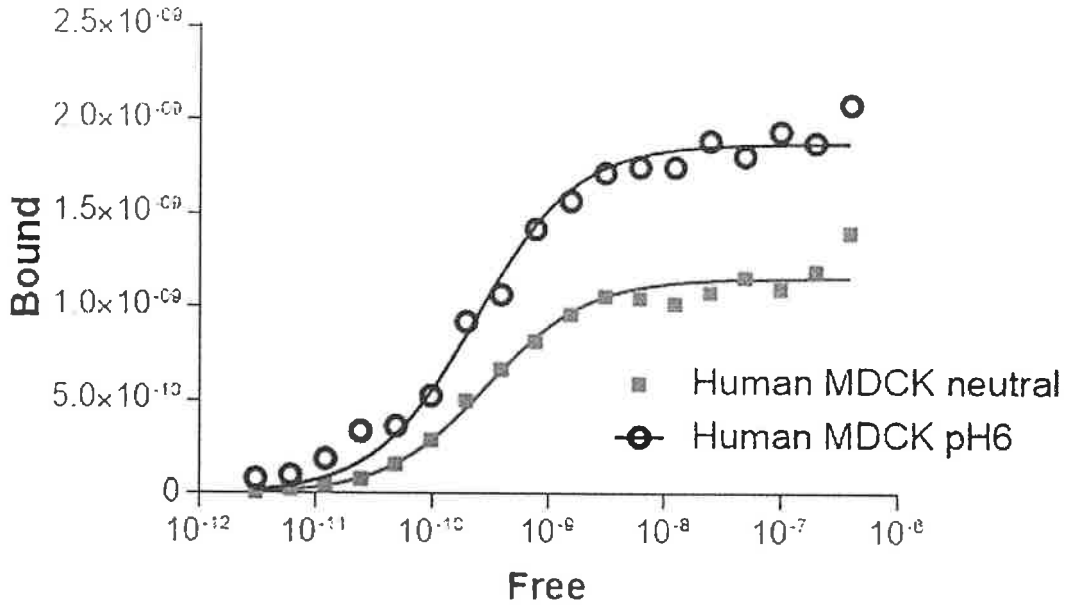


Figure 3 shows CA170_1638.g49 IgG4 inhibits IgG recycling in MDCK II clone 15 cells.

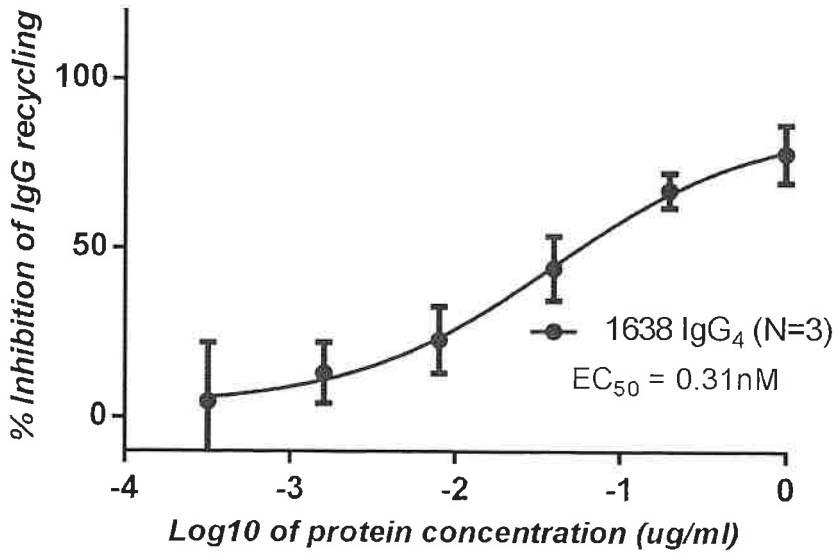


Figure 4 shows CA170_1638.g49 IgG4 inhibits IgG transcytosis in MDCK II clone 15 cells.

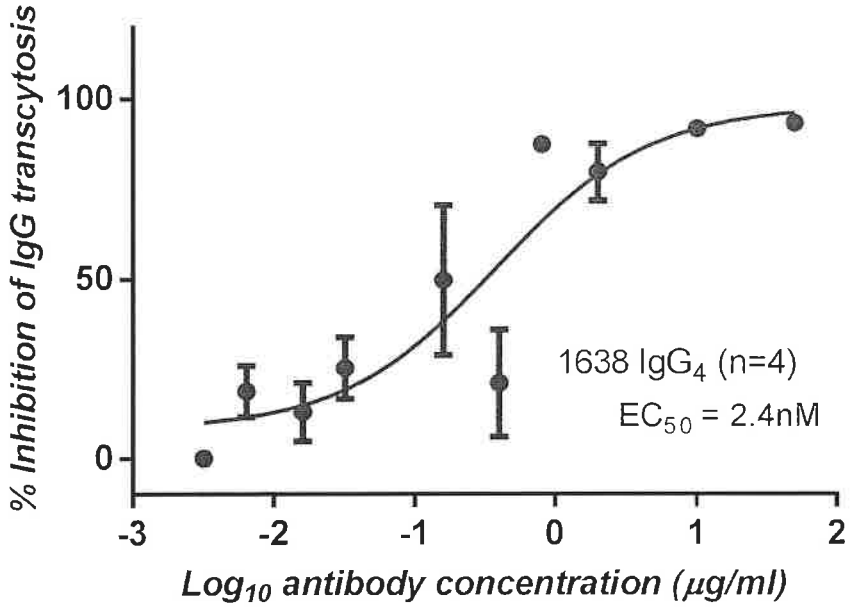


Figure 5 shows CA170_1638.g49 FabFv inhibits IgG transcytosis in MDCK II clone 15 cells.

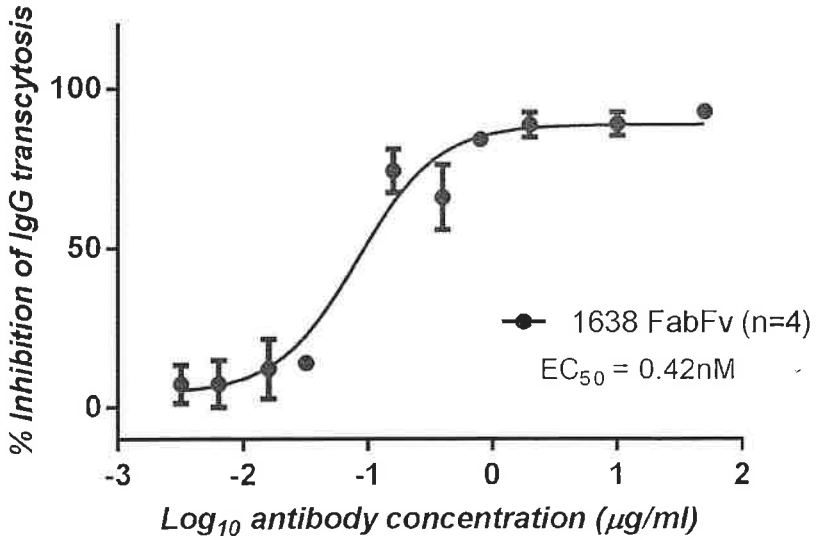


Figure 6 **shows CA170_1638.g49 IgG4 binding on MDCK II clone 40 cells in acidic and neutral pH.**

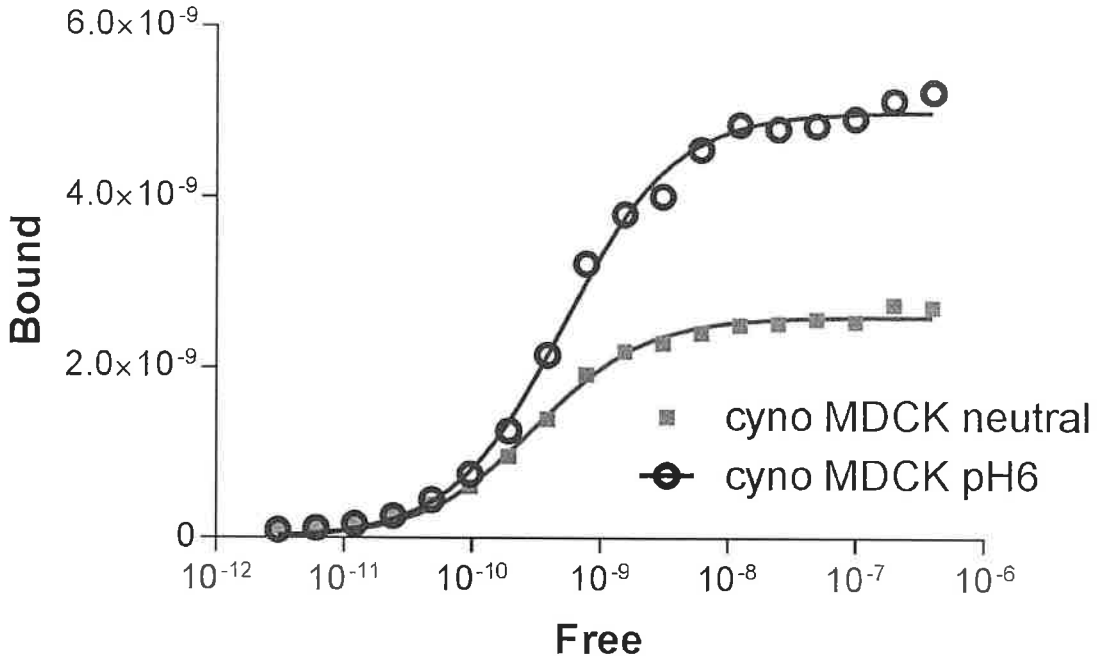


FIGURE 7 CA170_1638 Ab sequences

CDRH1
GFSLSTYGVGVG SEQ ID NO: 1
CDRH2
NIWWDDDKRYNPSLEN SEQ ID NO: 2
CDRH3
TPAYYGSHPPFDY SEQ ID NO: 3
CDRL1
RTSEDIYTNLA SEQ ID NO: 4
CDRL2
VAKTLQD SEQ ID NO: 5
CDRL3
LQGFKFPWT SEQ ID NO: 6
CDRL2 VARIANT
VAKTLQE SEQ ID NO: 7

FIGURE 8A

Rat Ab 1638 VL region SEQ ID NO: 8

DILMTQSPAS LSASLGETIS IECRTSEDIY TNLAWYQQKS GKSPQLLIYV AKTLQDGVPS
RFSGSGSGTH YSLKISGMQP EDEGDYFCLQ GFKFPWTFGG GTKLELK

Rat Ab 1638 VL region SEQ ID NO: 9

gacatcctga tgacacagtc tccagcttcc ctgtctgcat ctctgggaga aactatctcc
atcgaatgtc gaacaagtga agacatttac actaatttag cgtggtacca gcagaagtca
gggaaatctc ctcaactcct gatctatgtt gcaaagacgt tgcaagatgg ggtcccatca
cggttcagtg gcagtggatc tggcacgcat tattctctca agatcagcgg catgcaacct
gaagatgaag gggattattt ctgtctgcag ggtttcaagt ttccgtggac gttcggtgga
ggcaccaagc tggaactgaa a

Rat Ab 1638 VL region with signal sequence underlined and italicised SEQ ID NO: 10

MNVPTQFLGL LLLWITDGIC DILMTQSPAS LSASLGETIS IECRTSEDIY TNLAWYQQKS
GKSPQLLIYV AKTLQDGVPS RFSGSGSGTH YSLKISGMQP EDEGDYFCLQ GFKFPWTFGG GTKLELK

Rat Ab 1638 VL region with signal sequence underlined and italicised SEQ ID NO: 11

atgaatgtgc ccactcaatt ccttgggttg ttgctgctgt ggataacaga tggcatatgc
gacatcctga tgacacagtc tccagcttcc ctgtctgcat ctctgggaga aactatctcc
atcgaatgtc gaacaagtga agacatttac actaatttag cgtggtacca gcagaagtca
gggaaatctc ctcaactcct gatctatgtt gcaaagacgt tgcaagatgg ggtcccatca
cggttcagtg gcagtggatc tggcacgcat tattctctca agatcagcgg catgcaacct
gaagatgaag gggattattt ctgtctgcag ggtttcaagt ttccgtggac gttcggtgga
ggcaccaagc tggaactgaa a

Rat Ab 1638 VH region SEQ ID NO: 12

QVTLKESGPG ILQPSQTLSL TCTFSGFSLS TYGVGVGWIR QPSGKGLEWL ANIWWDDDKR
YNPSLENRLT ISKDTSNNQA FLKITNVDTA DSATYFCVRT PAYYGSHPPF DYWGQGVMVT VS

Rat Ab 1638 VH region SEQ ID NO: 13

caggttactc tgaaagagtc tggccctggg atattgcagc cctcccagac cctcagtctg
acttgcactt tctctgggtt ttcactgagt acttatggtg tgggtgtggg ctggattcgt
cagccttcag ggaagggtct ggagtggctg gcaaacattt ggtgggatga tgataagcgc
tacaatccat ctctggaaaa ccgactcact atctccaagg acacctccaa caaccaagca
ttcctcaaga tcaccaatgt ggacactgca gatagcgcca catacttctg tgttcggacc
ccggcttact atggcagcca tccccctttt gactactggg gccaaggagt catggtcaca gtctcg

Rat Ab 1638 VH region with signal sequence underlined and italicised SEQ ID NO: 14

MDRLTSSFLL LIVPAYVLSQ VTLKESGPGI LQPSQTLSLT CTFSGFSLST YGVGVGWIRQ
PSGKGLEWLA NIWWDDDKRY NPSLENRLTI SKDTSNNQAF LKITNVDTAD SATYFCVRTP
AYYGSHPPFD YWGQGVMVTV S

Rat Ab 1638 VH region with signal sequence underlined and italicised SEQ ID NO: 15

*atggacaggc taacttcctc attcctactg ctgattgtcc ctgcatatgt cctgtct*cag
gttactctga aagagtctgg ccctgggata ttgcagccct cccagaccct cagtctgact
tgcactttct ctgggttttc actgagtact tatggtgtgg gtgtgggctg gattcgtcag
ccttcaggga agggtctgga gtggctggca aacatttggt gggatgatga taagcgctac
aatccatctc tggaaaaccg actcactatc tccaaggaca cctccaacaa ccaagcattc
ctcaagatca ccaatgtgga cactgcagat agcgccacat acttctgtgt tcggaccccg
gcttactatg gcagccatcc ccctttgac tactggggcc aaggagtcat ggtcacagtc tcg

FIGURE 8B (signal sequences underlined and italicized)

1638 gL7 V-region SEQ ID NO: 16

DIQMTQSPSS LSASVGDRVT ITCRTSEDIY TNLAWYQQKP GKVPKLLIYV AKTLQEGVPS
RFSGSGSGTH YTLTISSLQP EDVATYYCLQ GFKFPWTFGG GTKVEIK

1638 gL7 V-region SEQ ID NO: 17

gatatccaga tgacccagag tccaagcagt ctctccgcca gcgtaggcga tcgtgtgact
attacctgtc gcactagcga ggacatctac accaacctgg cgtggtatca gcagaaacca
ggcaaagtgc cgaaactgct gatctacgtc gcgaaaaccc tccaggaagg tgtaccgtct
cgcttttccg gctctggtag cggtactcac tacaccctga ccatctcttc cctccagccg
gaagatgttg ctacctacta ttgcctccag ggcttcaaat tcccgtggac tttcggtggc
ggcacgaaag tggaaatcaa a

1638 gL7 V-region (*E. coli* expression) SEQ ID NO: 18

MKKTAIAIAV ALAGFATVAQ ADIQMTQSPS SLSASVGDRV TITCRTSEDI YTNLAWYQQK
PGKVPKLLIY VAKTLQEGVP SRFSGSGSGT HYTLTISSLQ PEDVATYYCL QGFKFPWTFG
GGTKVEIK

1638 gL7 V-region (*E. coli* expression) SEQ ID NO: 19

atgaaaaaga cagctatcgc aattgcagtg gccttggctg gtttcgctac cgtagcgcaa
*gct*gatatcc agatgaccca gagtccaagc agtctctccg ccagcgtagg cgatcgtgtg
actattacct gtcgcactag cgaggacatc tacaccaacc tggcgtggta tcagcagaaa
ccaggcaaag tgccgaaact gctgatctac gtcgcgaaaa ccctccagga aggtgtaccg
tctcgctttt ccggctctgg tagcggtact cactacaccc tgaccatctc ttccctccag
ccggaagatg ttgctaccta ctattgcctc cagggcttca aattcccgtg gactttcggt
ggcggcacga aagtggaaat caaa

1638 gL7 light chain (V + constant) SEQ ID NO: 20

DIQMTQSPSS LSASVGDRVT ITCRTSEDIY TNLAWYQQKP GKVPKLLIYV AKTLQEGVPS
RFSGSGSGTH YTLTISSLQP EDVATYYCLQ GFKFPWTFGG GTKVEIKRTV AAPSVFIFPP
SDEQLKSGTA SVVCLLNNFY PREAKVQWKV DNALQSGNSQ ESVTEQDSKD STYSLSSTLT
LSKADYEKHK VYACEVTHQG LSSPVTKSFN RGEC

1638 gL7 light chain (V + constant, *E. coli* expression) SEQ ID NO: 21

gatatccaga tgacccagag tccaagcagt ctctccgcca gcgtaggcga tcgtgtgact
attacctgtc gcactagcga ggacatctac accaacctgg cgtggtatca gcagaaacca
ggcaaagtgc cgaaactgct gatctacgtc gcgaaaaccc tccaggaagg tgtaccgtct
cgcttttccg gctctggtag cggtactcac tacaccctga ccatctcttc cctccagccg
gaagatgttg ctacctacta ttgcctccag ggcttcaaat tcccgtggac tttcggtggc
ggcacgaaag tggaaatcaa acgtacggta gcggccccat ctgtcttcat cttcccgcca
tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat
cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc
ctgagctcac cagtaacaaa aagttttaat agaggggagt gt

FIGURE 8C (signal sequence underlined and italicized)

1638 gL7 light chain (V + constant, mammalian expression) SEQ ID NO: 22

gatatccaga tgacccagag tccaagcagt ctctccgcca gcgtaggcga tcgtgtgact
attacctgtc gcactagcga ggacatctac accaacctgg cgtggtatca gcagaaacca
ggcaaagtgc cgaaactgct gatctacgtc gcgaaaaccc tccaggaagg tgtaccgtct
cgcttttccg gctctggtag cggtactcac tacaccctga ccatctcttc cctccagccg
gaagatgttg ctacctacta ttgcctccag ggcttcaaat tcccgtggac tttcggtggc
ggcacgaaag tggaaatcaa acggaccgtg gccgctccct ccgtgttcat cttcccaccc
tccgacgagc agctgaagtc cggcaccgcc tccgtcgtgt gcctgctgaa caacttctac
ccccgcgagg ccaaggtgca gtggaaggtg gacaacgccc tgcagtccgg caactcccag
gaatccgtca ccgagcagga ctccaaggac agcacctact ccctgtcctc caccctgacc
ctgtccaagg ccgactacga gaagcacaag gtgtacgcct gcgaagtgac ccaccagggc
ctgtccagcc ccgtgaccaa gtccttcaac cggggcgagt gc

1638 gL7 light chain (*E. coli* expression) SEQ ID NO: 23

MKKTAIAIAV ALAGFATVAQ ADIQMTQSPS SLSASVGDRV TITCRTSEDI YTNLAWYQQK
PGKVPKLLIY VAKTLQEGVP SRFSGSGSGT HYTLTISSLQ PEDVATYYCL QGFKFPWTFG
GGTKVEIKRT VAAPSVFIFP PSDEQLKSGT ASVVCLLNNF YPREAKVQWK VDNALQSGNS
QESVTEQDSK DSTYSLSSTL TLSKADYEKH KVYACEVTHQ GLSSPVTKSF NRGEC

1638 gL7 light chain (*E. coli* expression) SEQ ID NO: 24

atgaaaaaga cagctatcgc aattgcagtg gccttggctg gtttcgctac cgtagcgcaa
*gct*gatatcc agatgaccca gagtccaagc agtctctccg ccagcgtagg cgatcgtgtg
actattacct gtcgcactag cgaggacatc tacaccaacc tggcgtggta tcagcagaaa
ccaggcaaag tgccgaaact gctgatctac gtcgcgaaaa ccctccagga aggtgtaccg
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ggcggcacga aagtggaaat caaacgtacg gtagcggccc catctgtctt catcttcccg
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt cacccatcag
ggcctgagct caccagtaac aaaaagtttt aatagagggg agtgt

1638 gH33 V-region SEQ ID NO: 25

EVQLVESGGG LVQPGGSLRL SCAASGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR
YNPSLENRFT ISRDNAKNSA YLQMNSLRAE DTAVYYCART PAYYGSHPPF DYWGQGTMVT VS

1638 gH33 V-region SEQ ID NO: 26

gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcag cgtccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagccgtg ataacgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgcgcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac aatggttacc gtctcg

1638 gH33 V-region (*E. coli* expression) SEQ ID NO: 27

MKKTAIAIAV ALAGFATVAQ AEVQLVESGG GLVQPGGSLR LSCAASGFSL STYGVGVGWV
RQAPGKGLEW LANIWWDDDK RYNPSLENRF TISRDNAKNS AYLQMNSLRA EDTAVYYCAR
TPAYYGSHPP FDYWGQGTMV TVS

FIGURE 8D (signal sequences underlined and italicized)

1638 gH33 V-region (*E.coli* expression) SEQ ID NO: 28

atgaagaaga ctgctatagc aattgcagtg gcgctagctg gtttcgccac cgtggcgcaa *gct*gaggttc agctggtcga gtctggaggc gggcttgtcc agcctggagg gagcctgcgt ctctcttgtg cagcgtccgg cttctctctg tctacctacg gcgttggtgt tggttgggta cgtcaggctc caggtaaagg tctggaatgg ctcgcaaaca tctggtggga cgacgataaa cgctacaacc cgtccctgga gaaccgcttc accattagcc gtgataacgc gaaaaactcc gcgtatctcc agatgaactc cctgcgtgcc gaagacacgg ctgtgtacta ttgcgcgcgc actccggcgt actatggctc tcacccaccg tttgattact ggggtcaggg taccatggtt accgtctcg

1638 gH33 Fab heavy chain (V + human gamma-1 CH1) SEQ ID NO: 29

EVQLVESGGG LVQPGGSLRL SCAASGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR YNPSLENRFT ISRDNAKNSA YLQMNSLRAE DTAVYYCART PAYYGSHPPF DYWGQGTMVT VSSASTKGPS VFPLAPSSKS TSGGTAALGC LVKDYFPEPV TVSWNSGALT SGVHTFPAVL QSSGLYSLSS VVTVPSSSLG TQTYICNVNH KPSNTKVDKK VEPKSC

1638 gH33 Fab heavy chain (V + human gamma-1 CH1) SEQ ID NO: 30

gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc tcttgtgcag cgtccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc tacaacccgt ccctggagaa ccgcttcacc attagccgtg ataacgcgaa aaactccgcg tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgcgcgcact ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac catggttacc gtctcgagcg cttctacaaa gggcccatcg gtcttccccc tggcaccctc ctccaagagc acctctgggg gcacagcggc cctgggctgc ctggtcaagg actacttccc cgaaccggtg acggtgtcgt ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta cagtcctcag gactctactc cctcagcagc gtggtgaccg tgccctccag cagcttgggc acccagacct acatctgcaa cgtgaatcac aagcccagca acaccaaggt cgacaagaaa gttgagccca aatcttgt

1638 gH33 Fab heavy chain with (E. coli expression) SEQ ID NO: 31

*MKKTAIAIAV ALAGFATVAQ A*EVQLVESGG GLVQPGGSLR LSCAASGFSL STYGVGVGWV RQAPGKGLEW LANIWWDDDK RYNPSLENRF TISRDNAKNS AYLQMNSLRA EDTAVYYCAR TPAYYGSHPP FDYWGQGTMV TVSSASTKGP SVFPLAPSSK STSGGTAALG CLVKDYFPEP VTVSWNSGAL TSGVHTFPAV LQSSGLYSLS SVVTVPSSSL GTQTYICNVN HKPSNTKVDK KVEPKSC

1638 gH33 Fab heavy chain (E. coli expression) SEQ ID NO: 32

atgaagaaga ctgctatagc aattgcagtg gcgctagctg gtttcgccac cgtggcgcaa *gct*gaggttc agctggtcga gtctggaggc gggcttgtcc agcctggagg gagcctgcgt ctctcttgtg cagcgtccgg cttctctctg tctacctacg gcgttggtgt tggttgggta cgtcaggctc caggtaaagg tctggaatgg ctcgcaaaca tctggtggga cgacgataaa cgctacaacc cgtccctgga gaaccgcttc accattagcc gtgataacgc gaaaaactcc gcgtatctcc agatgaactc cctgcgtgcc gaagacacgg ctgtgtacta ttgcgcgcgc actccggcgt actatggctc tcacccaccg tttgattact ggggtcaggg taccatggtt accgtctcga gcgcttctac aaagggccca tcggtcttcc ccctggcacc ctcctccaag agcacctctg ggggcacagc ggccctgggc tgcctggtca aggactactt ccccgaaccg gtgacggtgt cgtggaactc aggcgccctg accagcggcg tgcacacctt cccggctgtc ctacagtcct caggactcta ctccctcagc agcgtggtga ccgtgccctc cagcagcttg ggcacccaga cctacatctg caacgtgaat cacaagccca gcaacaccaa ggtcgacaag aaagttgagc ccaaatcttg t

FIGURE 8E (signal sequences underlined and italicized)

1638 gH33 Fab' heavy chain (V + human gamma-1 CH1 + hinge) SEQ ID NO: 33

EVQLVESGGG LVQPGGSLRL SCAASGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR
YNPSLENRFT ISRDNAKNSA YLQMNSLRAE DTAVYYCART PAYYGSHPPF DYWGQGTMVT
VSSASTKGPS VFPLAPSSKS TSGGTAALGC LVKDYFPEPV TVSWNSGALT SGVHTFPAVL
QSSGLYSLSS VVTVPSSSLG TQTYICNVNH KPSNTKVDKK VEPKSCDKTH TCAA

1638 gH33 Fab' heavy chain (V + human gamma-1 CH1 + hinge) SEQ ID NO: 34

gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcag cgtccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagccgtg ataacgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgcgcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac catggttacc
gtctcgagcg cttctacaaa gggcccatcg gtcttccccc tggcaccctc ctccaagagc
acctctgggg gcacagcggc cctgggctgc ctggtcaagg actacttccc cgaaccggtg
acggtgtcgt ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta
cagtcctcag gactctactc cctcagcagc gtggtgaccg tgccctccag cagcttgggc
acccagacct acatctgcaa cgtgaatcac aagcccagca acaccaaggt cgacaagaaa
gttgagccca aatcttgtga caaaactcac acatgcgccg cg

1638 gH33 Fab' heavy chain (E. coli expression) SEQ ID NO: 35

MKKTAIAIAV ALAGFATVAQ AEVQLVESGG GLVQPGGSLR LSCAASGFSL STYGVGVGWV
RQAPGKGLEW LANIWWDDDK RYNPSLENRF TISRDNAKNS AYLQMNSLRA EDTAVYYCAR
TPAYYGSHPP FDYWGQGTMV TVSSASTKGP SVFPLAPSSK STSGGTAALG CLVKDYFPEP
VTVSWNSGAL TSGVHTFPAV LQSSGLYSLS SVVTVPSSSL GTQTYICNVN HKPSNTKVDK
KVEPKSCDKT HTCAA

1638 gH33 Fab' heavy chain (E. coli expression) SEQ ID NO: 36

atgaagaaga ctgctatagc aattgcagtg gcgctagctg gtttcgccac cgtggcgcaa
*gct*gaggttc agctggtcga gtctggaggc gggcttgtcc agcctggagg gagcctgcgt
ctctcttgtg cagcgtccgg cttctctctg tctacctacg gcgttggtgt tggttgggta
cgtcaggctc caggtaaagg tctggaatgg ctcgcaaaca tctggtggga cgacgataaa
cgctacaacc cgtccctgga gaaccgcttc accattagcc gtgataacgc gaaaaactcc
gcgtatctcc agatgaactc cctgcgtgcc gaagacacgg ctgtgtacta ttgcgcgcgc
actccggcgt actatggctc tcacccaccg tttgattact ggggtcaggg taccatggtt
accgtctcga gcgcttctac aaagggccca tcggtcttcc ccctggcacc ctcctccaag
agcacctctg ggggcacagc ggccctgggc tgcctggtca aggactactt ccccgaaccg
gtgacggtgt cgtggaactc aggcgccctg accagcggcg tgcacacctt cccggctgtc
ctacagtcct caggactcta ctccctcagc agcgtggtga ccgtgccctc cagcagcttg
ggcacccaga cctacatctg caacgtgaat cacaagccca gcaacaccaa ggtcgacaag
aaagttgagc ccaaatcttg tgacaaaact cacacatgcg ccgcg

1638 gH33 IgG4 heavy chain (V + human gamma-4P constant) SEQ ID NO: 37

EVQLVESGGG LVQPGGSLRL SCAASGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR
YNPSLENRFT ISRDNAKNSA YLQMNSLRAE DTAVYYCART PAYYGSHPPF DYWGQGTMVT
VSSASTKGPS VFPLAPCSRS TSESTAALGC LVKDYFPEPV TVSWNSGALT SGVHTFPAVL
QSSGLYSLSS VVTVPSSSLG TKTYTCNVDH KPSNTKVDKR VESKYGPPCP PCPAPEFLGG
PSVFLFPPKP KDTLMISRTP EVTCVVVDVS QEDPEVQFNW YVDGVEVHNA KTKPREEQFN
STYRVVSVLT VLHQDWLNGK EYKCKVSNKG LPSSIEKTIS KAKGQPREPQ VYTLPPSQEE
MTKNQVSLTC LVKGFYPSDI AVEWESNGQP ENNYKTTPPV LDSDGSFFLY SRLTVDKSRW
QEGNVFSCSV MHEALHNHYT QKSLSLSLGK

FIGURE 8F (signal sequences underlined and italicized)

1638 gH33 IgG4 heavy chain (V + human gamma-4P constant) SEQ ID NO: 38

```
gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcag cgtccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagccgtg ataacgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgcgcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac aatggttacc
gtctcgtctg cctccaccaa gggcccctcc gtgttcctc tggcccctg ctcccggtcc
acctccgagt ctaccgccgc tctgggctgc ctggtcaagg actacttccc cgagcccgtg
acagtgtcct ggaactctgg cgccctgacc tccggcgtgc acaccttccc tgccgtgctg
cagtcctccg gcctgtactc cctgtcctcc gtcgtgaccg tgccctcctc cagcctgggc
accaagacct acacctgtaa cgtggaccac aagccctcca acaccaaggt ggacaagcgg
gtggaatcta agtacggccc tccctgcccc ccctgccctg cccctgaatt tctgggcgga
ccttccgtgt tcctgttccc cccaaagccc aaggacaccc tgatgatctc ccggaccccc
gaagtgacct gcgtggtggt ggacgtgtcc caggaagatc ccgaggtcca gttcaattgg
tacgtggacg gcgtggaagt gcacaatgcc aagaccaagc ccagagagga acagttcaac
tccacctacc gggtggtgtc cgtgctgacc gtgctgcacc aggactggct gaacggcaaa
gagtacaagt gcaaggtgtc caacaagggc ctgccctcca gcatcgaaaa gaccatctcc
aaggccaagg gccagccccg cgagccccag gtgtacaccc tgcccccctag ccaggaagag
atgaccaaga accaggtgtc cctgacctgt ctggtcaagg gcttctaccc ctccgacatt
gccgtggaat gggagtccaa cggccagccc gagaacaact acaagaccac ccccccctgtg
ctggacagcg acggctcctt cttcctgtac tctcggctga ccgtggacaa gtcccggtgg
caggaaggca acgtcttctc ctgctccgtg atgcacgagg ccctgcacaa ccactacacc
cagaagtccc tgtccctgag cctgggcaag
```

1638 gH33 IgG4 heavy chain (V + human gamma-4P constant mammalian, no c-terminal lys) SEQ ID NO: 39

```
EVQLVESGGGLV QPGGSLRLSC AASGFSLSTY GVGVGWVRQA PGKGLEWLAN IWWDDDKRYN
PSLENRFTIS RDNAKNSAYL QMNSLRAEDT AVYYCARTPA YYGSHPPFDY WGQGTMVTVS
SASTKGPSVF PLAPCSRSTS ESTAALGCLV KDYFPEPVTV SWNSGALTSG VHTFPAVLQS
SGLYSLSSVV TVPSSSLGTK TYTCNVDHKP SNTKVDKRVE SKYGPPCPPC PAPEFLGGPS
VFLFPPKPKD TLMISRTPEV TCVVVDVSQE DPEVQFNWYV DGVEVHNAKT KPREEQFNST
YRVVSVLTVL HQDWLNGKEY KCKVSNKGLP SSIEKTISKA KGQPREPQVY TLPPSQEEMT
KNQVSLTCLV KGFYPSDIAV EWESNGQPEN NYKTTPPVLD SDGSFFLYSR LTVDKSRWQE
GNVFSCSVMH EALHNHYTQK SLSLSLG
```

1638 gL7 FabFv light chain SEQ ID NO: 40

```
DIQMTQSPSS LSASVGDRVT ITCRTSEDIY TNLAWYQQKP GKVPKLLIYV AKTLQEGVPS
RFSGSGSGTH YTLTISSLQP EDVATYYCLQ GFKFPWTFGG GTKVEIKRTV AAPSVFIFPP
SDEQLKSGTA SVVCLLNNFY PREAKVQWKV DNALQSGNSQ ESVTEQDSKD STYSLSSTLT
LSKADYEKHK VYACEVTHQG LSSPVTKSFN RGECGGGGSG GGGSGGGGSD IQMTQSPSSV
SASVGDRVTI TCQSSPSVWS NFLSWYQQKP GKAPKLLIYE ASKLTSGVPS RFSGSGSGTD
FTLTISSLQP EDFATYYCGG GYSSISDTTF GCGTKVEIKR T
```

FIGURE 8G (signal sequences underlined and italicized)

1638 gL7 FabFv light chain SEQ ID NO: 41

```
gatatccaga tgacccagag tccaagcagt ctctccgcca gcgtaggcga tcgtgtgact
attacctgtc gcactagcga ggacatctac accaacctgg cgtggtatca gcagaaacca
ggcaaagtgc cgaaactgct gatctacgtc gcgaaaaccc tccaggaagg tgtaccgtct
cgcttttccg gctctggtag cggtactcac tacaccctga ccatctcttc cctccagccg
gaagatgttg ctacctacta ttgcctccag ggcttcaaat tcccgtggac tttcggtggc
ggcacgaaag tggaaatcaa acgtacggta gcggccccat ctgtcttcat cttcccgcca
tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat
cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc
ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gtggtggagg tggctctggc
ggtggtggct ccggaggcgg aggaagcgac atccagatga cccagagccc ttcctctgta
agcgccagtg tcggagacag agtgactatt acctgccaaa gctccccttc agtctggtcc
aattttctat cctggtatca gcaaaagccc ggaaaggctc ctaaattgct gatctacgaa
gcaagcaaac tcaccagcgg cgtgcccagc aggttcagcg gcagtgggtc tggaactgac
tttaccctga caatctcctc actccagccc gaggacttcg ccacctatta ctgcggtgga
ggttacagta gcataagtga tacgacattt ggatgcggca ctaaagtgga aatcaagcgt acc
```

1638 gH33 FabFv heavy chain SEQ ID NO: 42

```
EVQLVESGGG LVQPGGSLRL SCAASGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR
YNPSLENRFT ISRDNAKNSA YLQMNSLRAE DTAVYYCART PAYYGSHPPF DYWGQGTMVT
VSSASTKGPS VFPLAPSSKS TSGGTAALGC LVKDYFPEPV TVSWNSGALT SGVHTFPAVL
QSSGLYSLSS VVTVPSSSLG TQTYICNVNH KPSNTKVDKK VEPKSCSGGG GSGGGGTGGG
GSEVQLLESG GGLVQPGGSL RLSCAVSGID LSNYAINWVR QAPGKCLEWI GIIWASGTTF
YATWAKGRFT ISRDNSKNTV YLQMNSLRAE DTAVYYCART VPGYSTAPYF DLWGQGTLVT VSS
```

1638 gH33 FabFv heavy chain SEQ ID NO: 43

```
gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcag cgtccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagccgtg ataacgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgcgcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac aatggttacc
gtctcgtccg cttctacaaa gggcccatcg gtcttccccc tggcaccctc ctccaagagc
acctctgggg gcacagcggc cctgggctgc ctggtcaagg actacttccc cgaaccggtg
acggtgtcgt ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta
cagtcctctg gactctactc cctcagcagc gtggtgaccg tgccctccag cagcttgggc
acccagacct acatctgcaa cgtgaatcac aagcccagca acaccaaggt ggacaagaaa
gttgagccca aatcttgttc cggaggtggc ggttccggag gtggcggtac aggtggcggt
gggtccgaag tccagctgct tgaatccgga ggcggactcg tgcagcccgg aggcagtctt
cgcttgtcct gcgctgtatc tggaatcgac ctgagcaatt acgccatcaa ctgggtgaga
caggcacctg ggaaatgcct cgaatggatc ggcattatat gggctagtgg gacgaccttt
tatgctacat gggcgaaggg tagattcaca atctcacggg ataatagtaa gaacacagtg
tacctgcaga tgaactccct gcgagcagag gataccgccg tttactattg tgctcgcact
gtcccaggtt atagcactgc accctacttt gatctgtggg ggcagggcac tctggtcacc
gtctcgtcc
```

Human IGKV1-27 JK4 acceptor framework SEQ ID NO: 44

```
DIQMTQSPSS LSASVGDRVT ITCRASQGIS NYLAWYQQKP GKVPKLLIYA ASTLQSGVPS
RFSGSGSGTD FTLTISSLQP EDVATYYCQK YNSAPLTFGG GTKVEIK
```

FIGURE 8H (signal sequences underlined and italicized)

Human IGKV1-27 JK4 acceptor framework SEQ ID NO: 45
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc
atcacttgcc gggcgagtca gggcattagc aattatttag cctggtatca gcagaaacca
gggaaagttc ctaagctcct gatctatgct gcatccactt tgcaatcagg ggtcccatct
cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct
gaagatgttg caacttatta ctgtcaaaag tataacagtg cccctctcac tttcggcgga
gggaccaagg tggagatcaa a

Human IGHV3-7 JH3 acceptor framework SEQ ID NO: 46
EVQLVESGGG LVQPGGSLRL SCAASGFTFS SYWMSWVRQA PGKGLEWVAN IKQDGSEKYY
VDSVKGRFTI SRDNAKNSLY LQMNSLRAED TAVYYCARDA FDVWGQGTMV TVSS

Human IGHV3-7 JH3 acceptor framework SEQ ID NO: 47
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc
tcctgtgcag cctctggatt cacctttagt agctattgga tgagctgggt ccgccaggct
ccagggaagg ggctggagtg ggtggccaac ataaagcaag atggaagtga gaaatactat
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatgct
tttgatgtct ggggccaagg gacaatggtc accgtctctt ca

Human FcRn alpha chain extracellular sequence SEQ ID NO: 48
AESHLSLLYH LTAVSSPAPG TPAFWVSGWL GPQQYLSYNS LRGEAEPCGA WVWENQVSWY
WEKETTDLRI KEKLFLEAFK ALGGKGPYTL QGLLGCELGP DNTSVPTAKF ALNGEEFMNF
DLKQGTWGGD WPEALAISQR WQQQDKAANK ELTFLLFSCP HRLREHLERG RGNLEWKEPP
SMRLKARPSS PGFSVLTCSA FSFYPPELQL RFLRNGLAAG TGQGDFGPNS DGSFHASSSL
TVKSGDEHHY CCIVQHAGLA QPLRVELESP AKSS

Rat β2M SEQ ID NO:49
IQKTPQIQVY SRHPPENGKP NFLNCYVSQF HPPQIEIELL KNGKKIPNIE MSDLSFSKDW
SFYILAHTEF TPTETDVYAC RVKHVTLKEP KTVTWDRDM

Human β2M including signal sequence SEQ ID NO:50
MSRSVALAVL ALLSLSGLEA IQRTPKIQVY SRHPAENGKS NFLNCYVSGF HPSDIEVDLL
KNGERIEKVE HSDLSFSKDW SFYLLYYTEF TPTEKDEYAC RVNHVTLSQP KIVKWDRDM

1638gL2 V-region SEQ ID NO: 51
DIQMTQSPSS LSASVGDRVT ITCRTSEDIY TNLAWYQQKP GKVPKLLIYV AKTLQDGVPS
RFSGSGSGTH YTLTISSLQP EDVATYYCLQ GFKFPWTFGG GTKVEIK

1638gL2 V-region SEQ ID NO: 52
gatatccaga tgacccagag tccaagcagt ctctccgcca gcgtaggcga tcgtgtgact
attacctgtc gcactagcga ggacatctac accaacctgg cgtggtatca gcagaaacca
ggcaaagtgc cgaaactgct gatctacgtc gcgaaaaccc tccaggacgg tgtaccgtct
cgcttttccg gctctggtag cggtactcac tacaccctga ccatctcttc cctccagccg
gaagatgttg ctacctacta ttgcctccag ggcttcaaat tcccgtggac tttcggtggc
ggcacgaaag tggaaatcaa a

FIGURE 8i (1638.g28 = gL2 gH2) signal sequence underlined and italicized

1638 gL2 V-region (*E. coli* expression) SEQ ID NO: 53

MKKTAIAIAV ALAGFATVAQ ADIQMTQSPS SLSASVGDRV TITCRTSEDI YTNLAWYQQK
PGKVPKLLIY VAKTLQDGVP SRFSGSGSGT HYTLTISSLQ PEDVATYYCL QGFKFPWTFG
GGTKVEIK

1638 gL2 V-region (*E. coli* expression) SEQ ID NO: 54

atgaaaaaga cagctatcgc aattgcagtg gccttggctg gtttcgctac cgtagcgcaa
*gct*gatatcc agatgaccca gagtccaagc agtctctccg ccagcgtagg cgatcgtgtg
actattacct gtcgcactag cgaggacatc tacaccaacc tggcgtggta tcagcagaaa
ccaggcaaag tgccgaaact gctgatctac gtcgcgaaaa ccctccagga cggtgtaccg
tctcgctttt ccggctctgg tagcggtact cactacaccc tgaccatctc ttccctccag
ccggaagatg ttgctaccta ctattgcctc cagggcttca aattcccgtg gactttcggt
ggcggcacga aagtggaaat caaa

1638 gL2 light chain (V + constant) SEQ ID NO: 55

DIQMTQSPSS LSASVGDRVT ITCRTSEDIY TNLAWYQQKP GKVPKLLIYV AKTLQDGVPS
RFSGSGSGTH YTLTISSLQP EDVATYYCLQ GFKFPWTFGG GTKVEIKRTV AAPSVFIFPP
SDEQLKSGTA SVVCLLNNFY PREAKVQWKV DNALQSGNSQ ESVTEQDSKD STYSLSSTLT
LSKADYEKHK VYACEVTHQG LSSPVTKSFN RGEC

1638 gL2 light chain (V + constant, codon optimized for *E. coli* expression) SEQ ID NO: 56

gatatccaga tgacccagag tccaagcagt ctctccgcca gcgtaggcga tcgtgtgact
attacctgtc gcactagcga ggacatctac accaacctgg cgtggtatca gcagaaacca
ggcaaagtgc cgaaactgct gatctacgtc gcgaaaaccc tccaggacgg tgtaccgtct
cgcttttccg gctctggtag cggtactcac tacaccctga ccatctcttc cctccagccg
gaagatgttg ctacctacta ttgcctccag ggcttcaaat tcccgtggac tttcggtggc
ggcacgaaag tggaaatcaa acgtacggta gcggccccat ctgtcttcat cttcccgcca
tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat
cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc
ctgagctcac cagtaacaaa aagttttaat agaggggagt gt

1638 gL2 light chain (*E. coli* expression) SEQ ID NO: 57

MKKTAIAIAV ALAGFATVAQ ADIQMTQSPS SLSASVGDRV TITCRTSEDI YTNLAWYQQK
PGKVPKLLIY VAKTLQDGVP SRFSGSGSGT HYTLTISSLQ PEDVATYYCL QGFKFPWTFG
GGTKVEIKRT VAAPSVFIFP PSDEQLKSGT ASVVCLLNNF YPREAKVQWK VDNALQSGNS
QESVTEQDSK DSTYSLSSTL TLSKADYEKH KVYACEVTHQ GLSSPVTKSF NRGEC

FIGURE 8J

1638 gL2 light chain (*E. coli* expression) SEQ ID NO: 58

atgaaaaaga cagctatcgc aattgcagtg gccttggctg gtttcgctac cgtagcgcaa
*gct*gatatcc agatgaccca gagtccaagc agtctctccg ccagcgtagg cgatcgtgtg
actattacct gtcgcactag cgaggacatc tacaccaacc tggcgtggta tcagcagaaa
ccaggcaaag tgccgaaact gctgatctac gtcgcgaaaa ccctccagga cggtgtaccg
tctcgctttt ccggctctgg tagcggtact cactacaccc tgaccatctc ttccctccag
ccggaagatg ttgctaccta ctattgcctc cagggcttca aattcccgtg gactttcggt
ggcggcacga aagtggaaat caaacgtacg gtagcggccc catctgtctt catcttcccg
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt cacccatcag
ggcctgagct caccagtaac aaaaagtttt aatagagggg agtgt

1638gH2 V-region SEQ ID NO: 59

EVQLVESGGG LVQPGGSLRL SCAFSGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR
YNPSLENRFT ISKDTAKNSA YLQMNSLRAE DTAVYYCVRT PAYYGSHPPF DYWGQGTMVT VS

1638gH2 V-region SEQ ID NO: 60

gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcat tctccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagcaaag ataccgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgttcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac catggttacc gtctcg

1638 gH2 V-region with signal sequence underlined and italicized (*E. coli* expression) SEQ ID NO: 61

*MKKTAIAIAV ALAGFATVAQ A*EVQLVESGG GLVQPGGSLR LSCAFSGFSL STYGVGVGWV
RQAPGKGLEW LANIWWDDDK RYNPSLENRF TISKDTAKNS AYLQMNSLRA EDTAVYYCVR
TPAYYGSHPP FDYWGQGTMV TVS

1638 gH2 V-region with signal sequence underlined and italicized (*E. coli* expression) SEQ ID NO: 62

atgaagaaga ctgctatagc aattgcagtg gcgctagctg gtttcgccac cgtggcgcaa
*gct*gaggttc agctggtcga gtctggaggc gggcttgtcc agcctggagg gagcctgcgt
ctctcttgtg cattctccgg cttctctctg tctacctacg gcgttggtgt tggttgggta
cgtcaggctc caggtaaagg tctggaatgg ctcgcaaaca tctggtggga cgacgataaa
cgctacaacc cgtccctgga gaaccgcttc accattagca aagataccgc gaaaaactcc
gcgtatctcc agatgaactc cctgcgtgcc gaagacacgg ctgtgtacta ttgcgttcgc
actccggcgt actatggctc tcacccaccg tttgattact ggggtcaggg taccatggtt
accgtctcg

1638 gH2 Fab' heavy chain (V + human gamma-1 CH1 + hinge) SEQ ID NO: 63

EVQLVESGGG LVQPGGSLRL SCAFSGFSLS TYGVGVGWVR QAPGKGLEWL ANIWWDDDKR
YNPSLENRFT ISKDTAKNSA YLQMNSLRAE DTAVYYCVRT PAYYGSHPPF DYWGQGTMVT
VSSASTKGPS VFPLAPSSKS TSGGTAALGC LVKDYFPEPV TVSWNSGALT SGVHTFPAVL
QSSGLYSLSS VVTVPSSSLG TQTYICNVNH KPSNTKVDKK VEPKSCDKTH TCAA

FIGURE 8K signal sequence underlined and italicized

1638 gH2 Fab' heavy chain (V + human gamma-1 CH1 + hinge) SEQ ID NO: 64

gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcat tctccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagcaaag ataccgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgttcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac catggttacc
gtctcgagcg cttctacaaa gggcccatcg gtcttccccc tggcaccctc ctccaagagc
acctctgggg gcacagcggc cctgggctgc ctggtcaagg actacttccc cgaaccggtg
acggtgtcgt ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta
cagtcctcag gactctactc cctcagcagc gtggtgaccg tgccctccag cagcttgggc
acccagacct acatctgcaa cgtgaatcac aagcccagca acaccaaggt cgacaagaaa
gttgagccca aatcttgtga caaaactcac acatgcgccg cg

1638 gH2 Fab' heavy chain (*E. coli* expression) SEQ ID NO: 65

*MKKTAIAIAV ALAGFATVAQ A*EVQLVESGG GLVQPGGSLR LSCAFSGFSL STYGVGVGWV
RQAPGKGLEW LANIWWDDDK RYNPSLENRF TISKDTAKNS AYLQMNSLRA EDTAVYYCVR
TPAYYGSHPP FDYWGQGTMV TVSSASTKGP SVFPLAPSSK STSGGTAALG CLVKDYFPEP
VTVSWNSGAL TSGVHTFPAV LQSSGLYSLS SVVTVPSSSL GTQTYICNVN HKPSNTKVDK
KVEPKSCDKT HTCAA

1638 gH2 Fab' heavy chain d (*E. coli* expression) SEQ ID NO: 66

atgaagaaga ctgctatagc aattgcagtg gcgctagctg gtttcgccac cgtggcgcaa
*gct*gaggttc agctggtcga gtctggaggc gggcttgtcc agcctggagg gagcctgcgt
ctctcttgtg cattctccgg cttctctctg tctacctacg gcgttggtgt tggttgggta
cgtcaggctc caggtaaagg tctggaatgg ctcgcaaaca tctggtggga cgacgataaa
cgctacaacc cgtccctgga gaaccgcttc accattagca aagataccgc gaaaaactcc
gcgtatctcc agatgaactc cctgcgtgcc gaagacacgg ctgtgtacta ttgcgttcgc
actccggcgt actatggctc tcacccaccg tttgattact ggggtcaggg taccatggtt
accgtctcga gcgcttctac aaagggccca tcggtcttcc ccctggcacc ctcctccaag
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gtgacggtgt cgtggaactc aggcgccctg accagcggcg tgcacacctt cccggctgtc
ctacagtcct caggactcta ctccctcagc agcgtggtga ccgtgccctc cagcagcttg
ggcacccaga cctacatctg caacgtgaat cacaagccca gcaacaccaa ggtcgacaag
aaagttgagc ccaaatcttg tgacaaaact cacacatgcg ccgcg

Human β2-microglobulin SEQ ID NO: 72

IQRTPKIQVYSRHPAENGKSNFLNCYVSGFHPSDIEVDLLKNGERIEKVEHSDLSFSKDWSFYLLYYTEFTPT
EKDEYACRVNHVTLSQPKIVKWDRDM

FIGURE 8L

1638gH33 IgG1 heavy chain (V + human gamma-1 constant) SEQ ID NO: 73

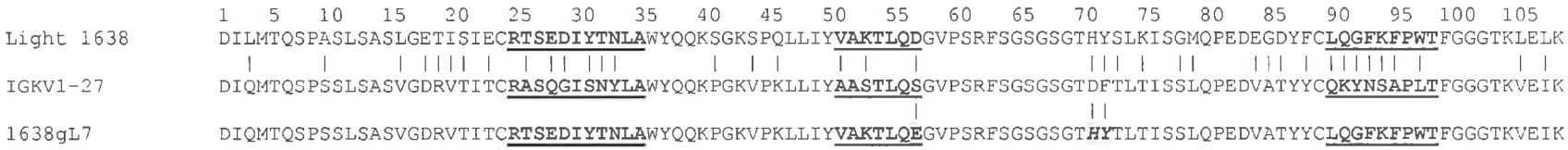
EVQLVESGGG LVQPGGSLRL SCAASGFSLS TYGVGVGWVR QAPGKGLEWL
ANIWWDDDKR YNPSLENRFT ISRDNAKNSA YLQMNSLRAE DTAVYYCART
PAYYGSHPPF DYWGQGTMVT VSSASTKGPS VFPLAPSSKS TSGGTAALGC
LVKDYFPEPV TVSWNSGALT SGVHTFPAVL QSSGLYSLSS VVTVPSSSLG
TQTYICNVNH KPSNTKVDKK VEPKSCDKTH TCPPCPAPEL LGGPSVFLFP
PKPKDTLMIS RTPEVTCVVV DVSHEDPEVK FNWYVDGVEV HNAKTKPREE
QYNSTYRVVS VLTVLHQDWL NGKEYKCKVS NKALPAPIEK TISKAKGQPR
EPQVYTLPPS RDELTKNQVS LTCLVKGFYP SDIAVEWESN GQPENNYKTT
PPVLDSDGSF FLYSKLTVDK SRWQQGNVFS CSVMHEALHN HYTQKSLSLS
PGK

1638gH33 IgG1 heavy chain (V + human gamma-1 constant, exons underlined) SEQ ID NO: 74

gaggttcagc tggtcgagtc tggaggcggg cttgtccagc ctggagggag cctgcgtctc
tcttgtgcag cgtccggctt ctctctgtct acctacggcg ttggtgttgg ttgggtacgt
caggctccag gtaaaggtct ggaatggctc gcaaacatct ggtgggacga cgataaacgc
tacaacccgt ccctggagaa ccgcttcacc attagccgtg ataacgcgaa aaactccgcg
tatctccaga tgaactccct gcgtgccgaa gacacggctg tgtactattg cgcgcgcact
ccggcgtact atggctctca cccaccgttt gattactggg gtcagggtac aatggttacc
gtctcgagcg cttctacaaa gggcccatcg gtcttccccc tggcaccctc ctccaagagc
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acggtgtcgt ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta
cagtcctcag gactctactc cctcagcagc gtggtgaccg tgccctccag cagcttgggc
acccagacct acatctgcaa cgtgaatcac aagcccagca acaccaaggt cgacaagaaa
gttggtgaga ggccagcaca gggagggagg gtgtctgctg gaagccaggc tcagcgctcc
tgcctggacg catcccggct atgcagcccc agtccagggc agcaaggcag gccccgtctg
cctcttcacc cggaggcctc tgcccgcccc actcatgctc agggagaggg tcttctggct
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tcctcaccgt cctgcaccag gactggctga atggcaagga gtacaagtgc aaggtctcca
acaaagccct cccagccccc atcgagaaaa ccatctccaa agccaaaggt gggacccgtg
gggtgcgagg gccacatgga cagaggccgg ctcggcccac cctctgccct gagagtgacc
gctgtaccaa cctctgtccc tacagggcag ccccgagaac cacaggtgta caccctgccc
ccatcccggg atgagctgac caagaaccag gtcagcctga cctgcctggt caaaggcttc
tatcccagcg acatcgccgt ggagtgggag agcaatgggc agccggagaa caactacaag
accacgcctc ccgtgctgga ctccgacggc tccttcttcc tctacagcaa gctcaccgtg
gacaagagca ggtggcagca ggggaacgtc ttctcatgct ccgtgatgca tgaggctctg
cacaaccact acacgcagaa gagcctctcc ctgtctccgg gtaaa

Figure 9A

LIGHT CHAIN Graft 1638



Legend

1638 = Rat variable light chain sequence

1638gL7 = Humanized graft of 1638 variable light chain using IGKV1-27 human germline as the acceptor framework.

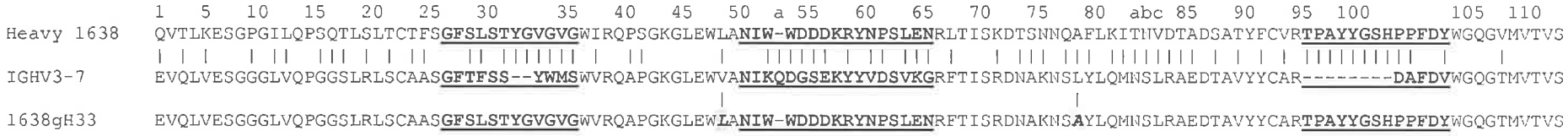
CDRs are shown in bold/underlined

Donor residues are shown in bold/italic and are highlighted: H70 and Y71

The mutation in CDRL2 to remove a potential Aspartic acid isomerization site is shown in bold/underlined and is highlighted: E56

Figure 9B

HEAVY CHAIN Graft 1638



Legend

1638 = Rat variable heavy chain sequence

1638gH33 = Humanized graft of 1638 variable heavy chain using IGHV3-7 human germline as the acceptor framework.

CDRs are shown in bold/underlined

Donor residues are shown in bold/italic and are highlighted: L48 and A78