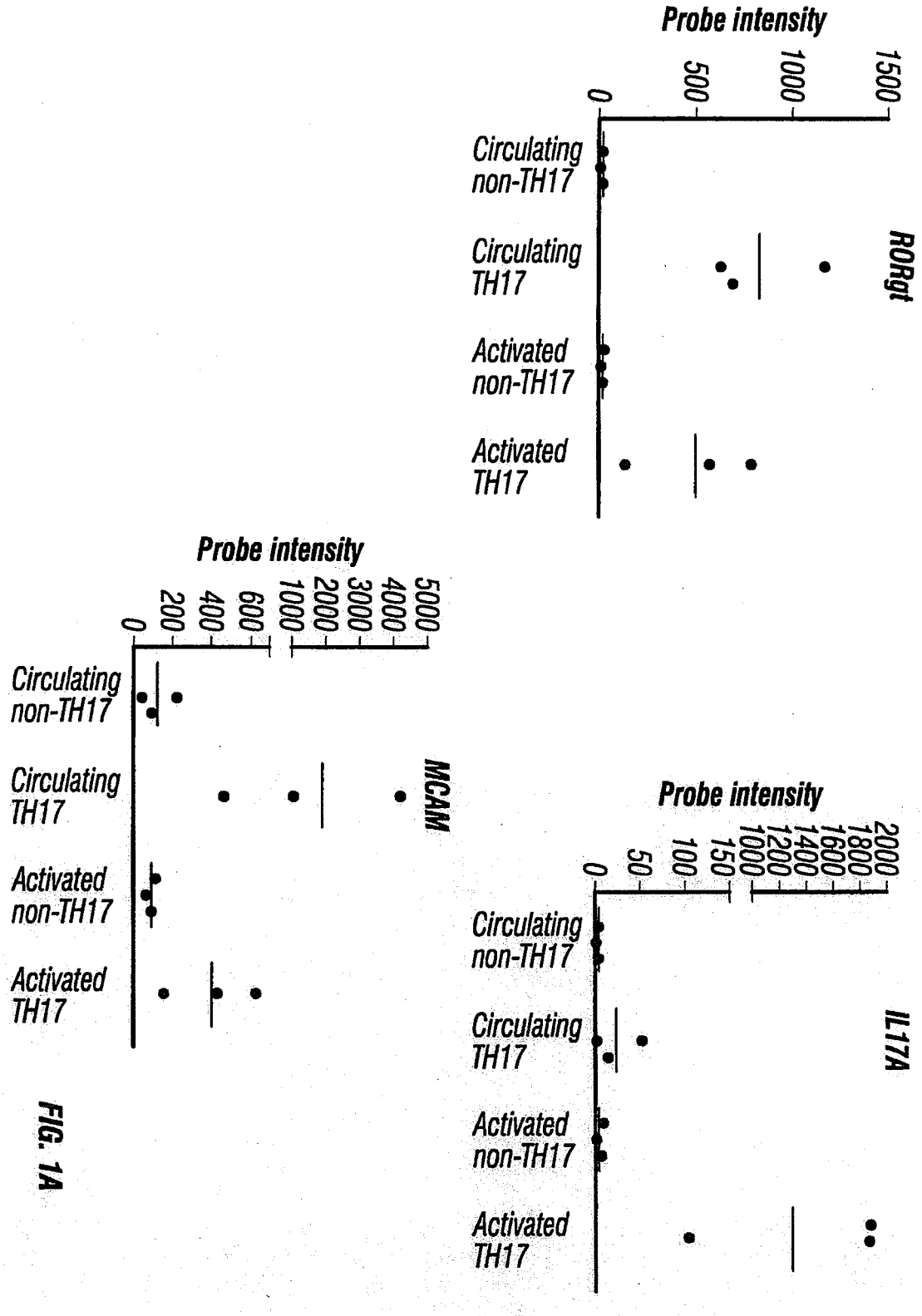

Probe intensity
0
500
1000
1500
Circulating non-TH17
Circulating TH17
Activated non-TH17
Activated TH17
RORgt
Probe intensity
0
200
400
600
1000
2000
3000
4000
5000
Circulating non-TH17
Circulating TH17
Activated non-TH17
Activated TH17
MCAM
Probe intensity
0
50
100
150
1000
1200
1400
1600
1800
2000
Circulating non-TH17
Circulating TH17
Activated non-TH17
Activated TH17
IL17A

FIG. 1A

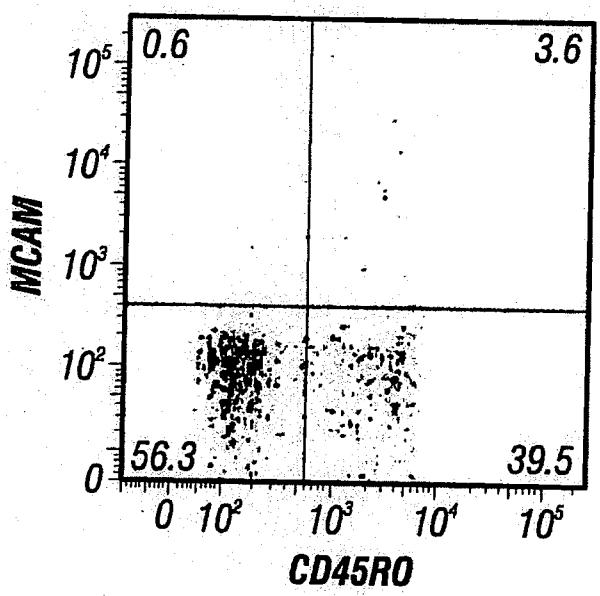


FIG. 1B

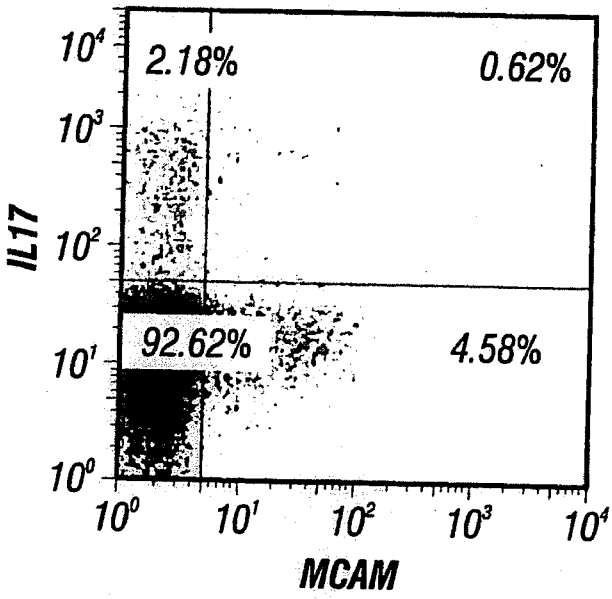


FIG. 1C

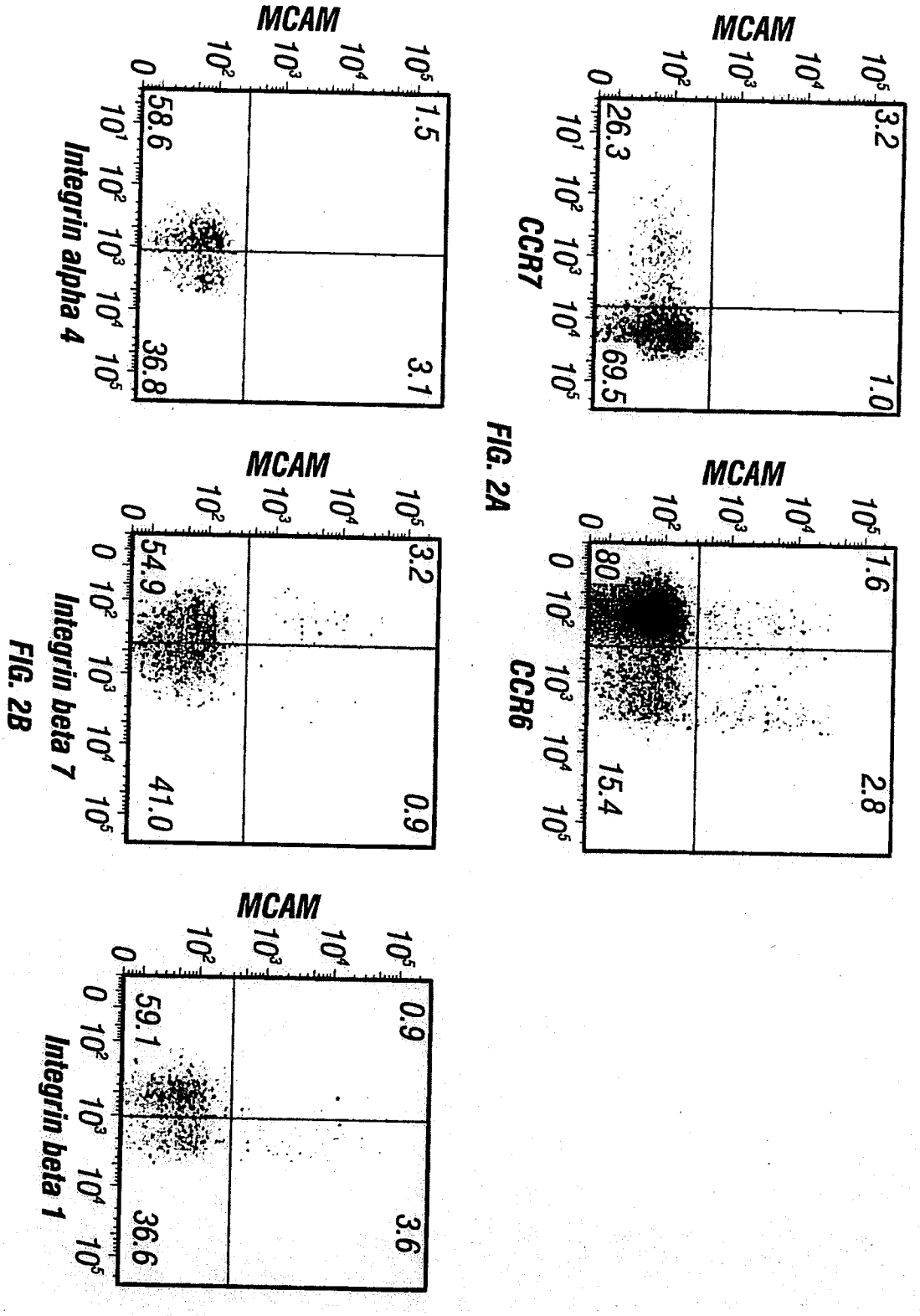

MCAM
CCR7
26.3
69.5
3.2
1.0
MCAM
CCR6
80
15.4
1.6
2.8
MCAM
Integrin alpha 4
58.6
36.8
1.5
3.1
MCAM
Integrin beta 7
54.9
41.0
3.2
0.9
MCAM
Integrin beta 1
59.1
36.6
0.9
3.6

FIG. 2A

FIG. 2B

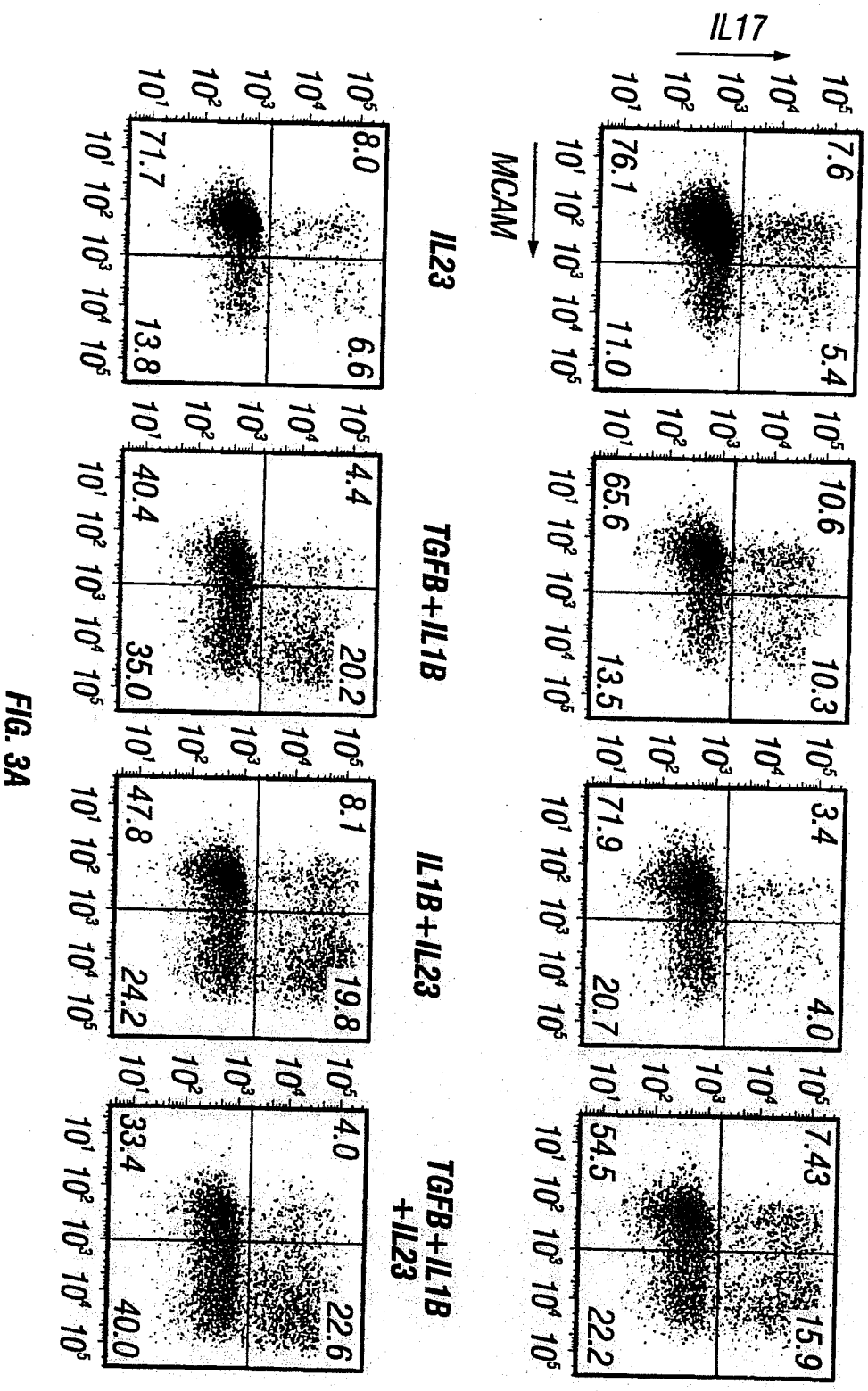

IL17
MCAM
None
TGFB
IL12
IL1B
IL23
TGFB+IL1B
IL1B+IL23
TGFB+IL1B +IL23
7.6
5.4
76.1
11.0
10.6
10.3
65.6
13.5
3.4
4.0
71.9
20.7
7.43
15.9
54.5
22.2
8.0
6.6
71.7
13.8
4.4
20.2
40.4
35.0
8.1
19.8
47.8
24.2
4.0
22.6
33.4
40.0

FIG. 3A

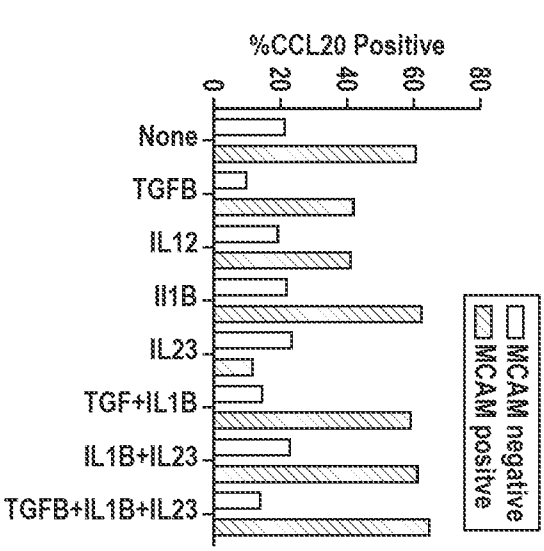


FIG. 3E

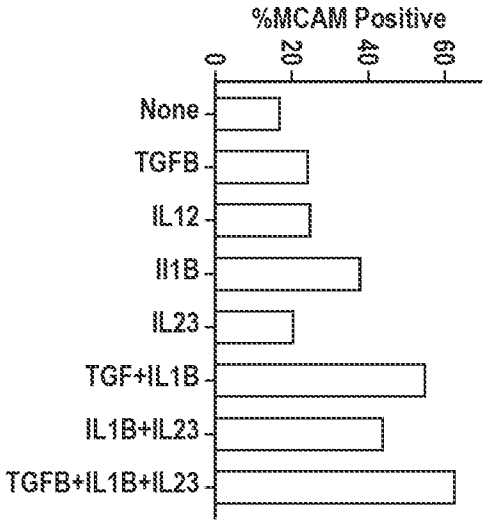


FIG. 3B

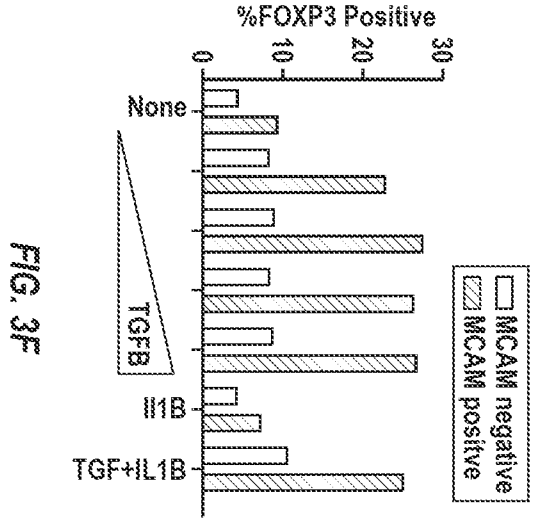


FIG. 3F

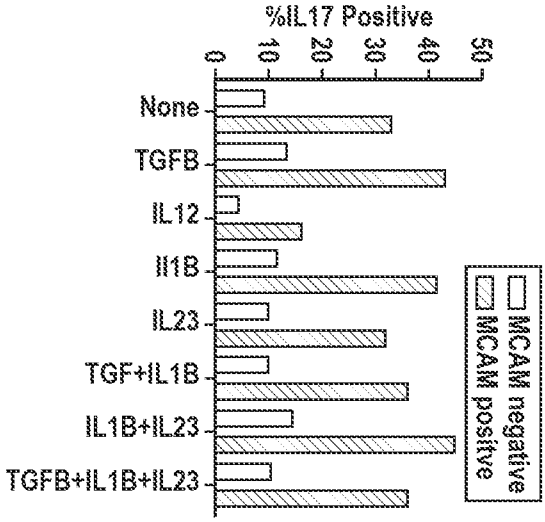


FIG. 3C

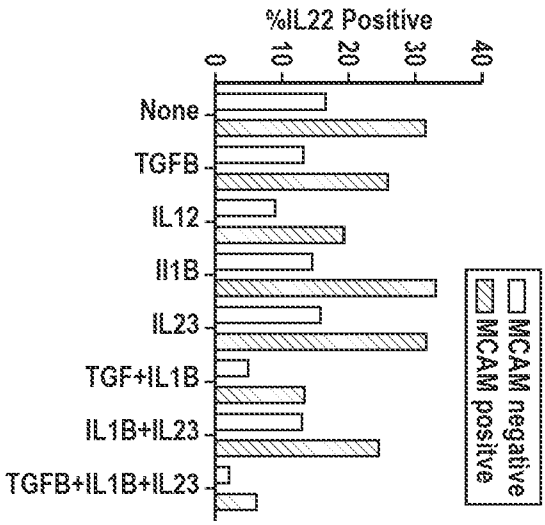


FIG. 3D



FIG. 4A



FIG. 4B

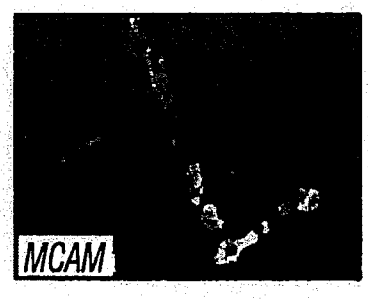


FIG. 4C



FIG. 4D

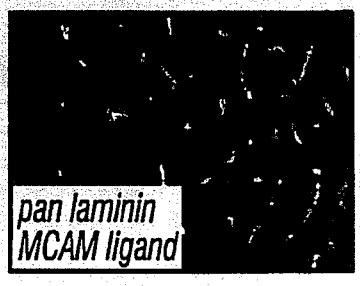


FIG. 4E

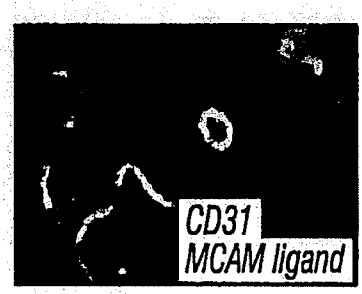


FIG. 4F

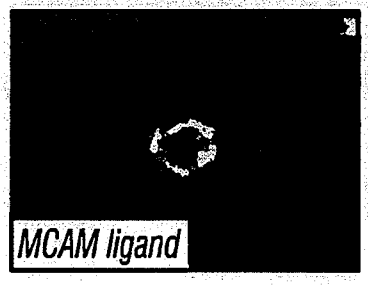
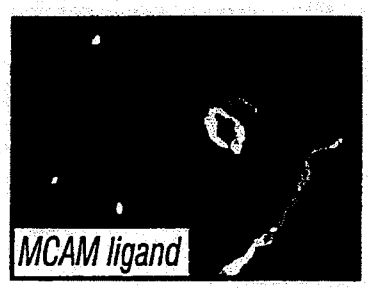






FIG. 4G



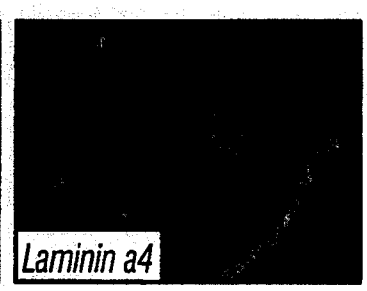




FIG. 4H

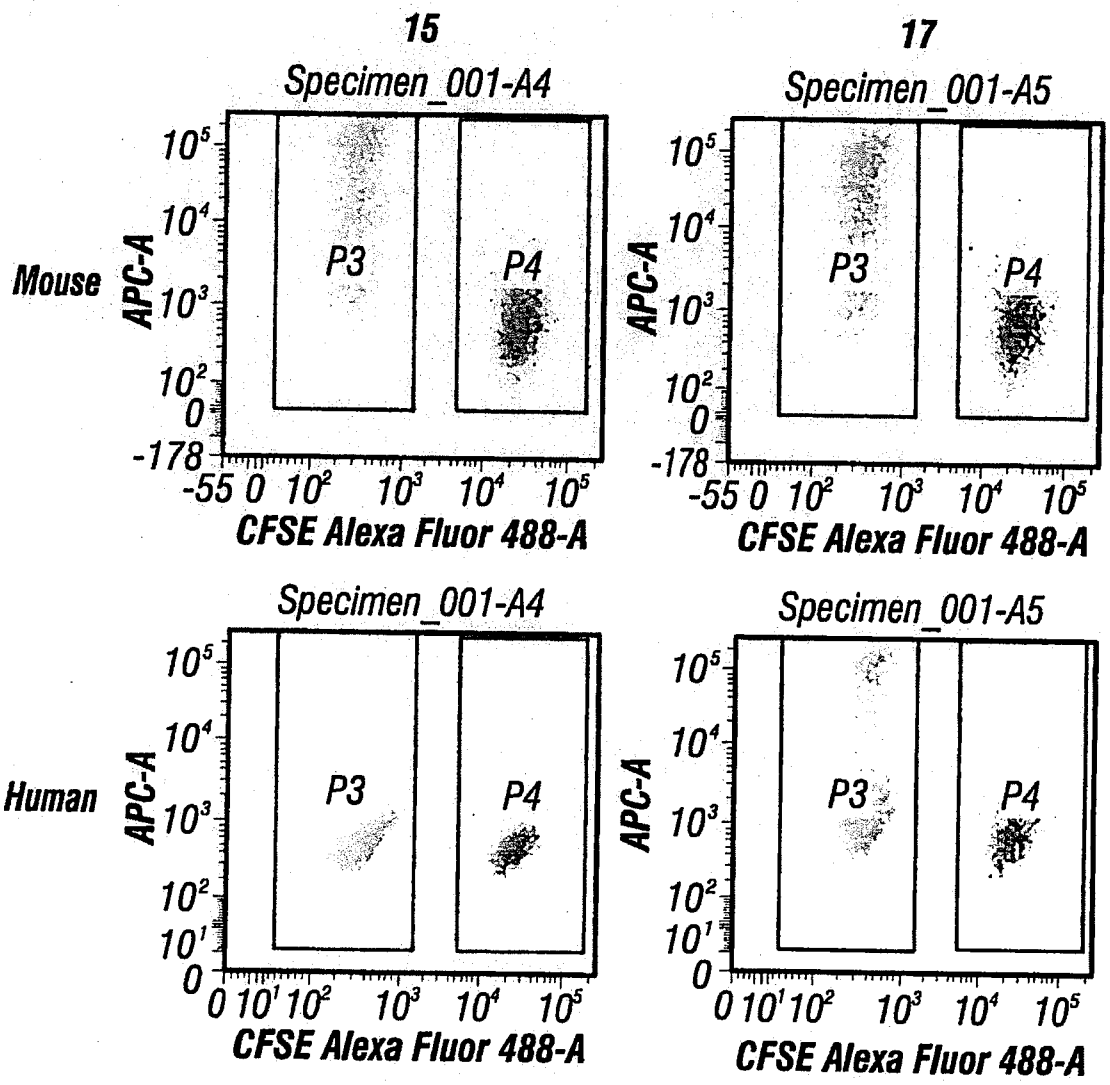

15
17
Specimen_001-A4
Specimen_001-A5
Mouse
Human
APC-A
P3
P4
CFSE Alexa Fluor 488-A

FIG. 5A

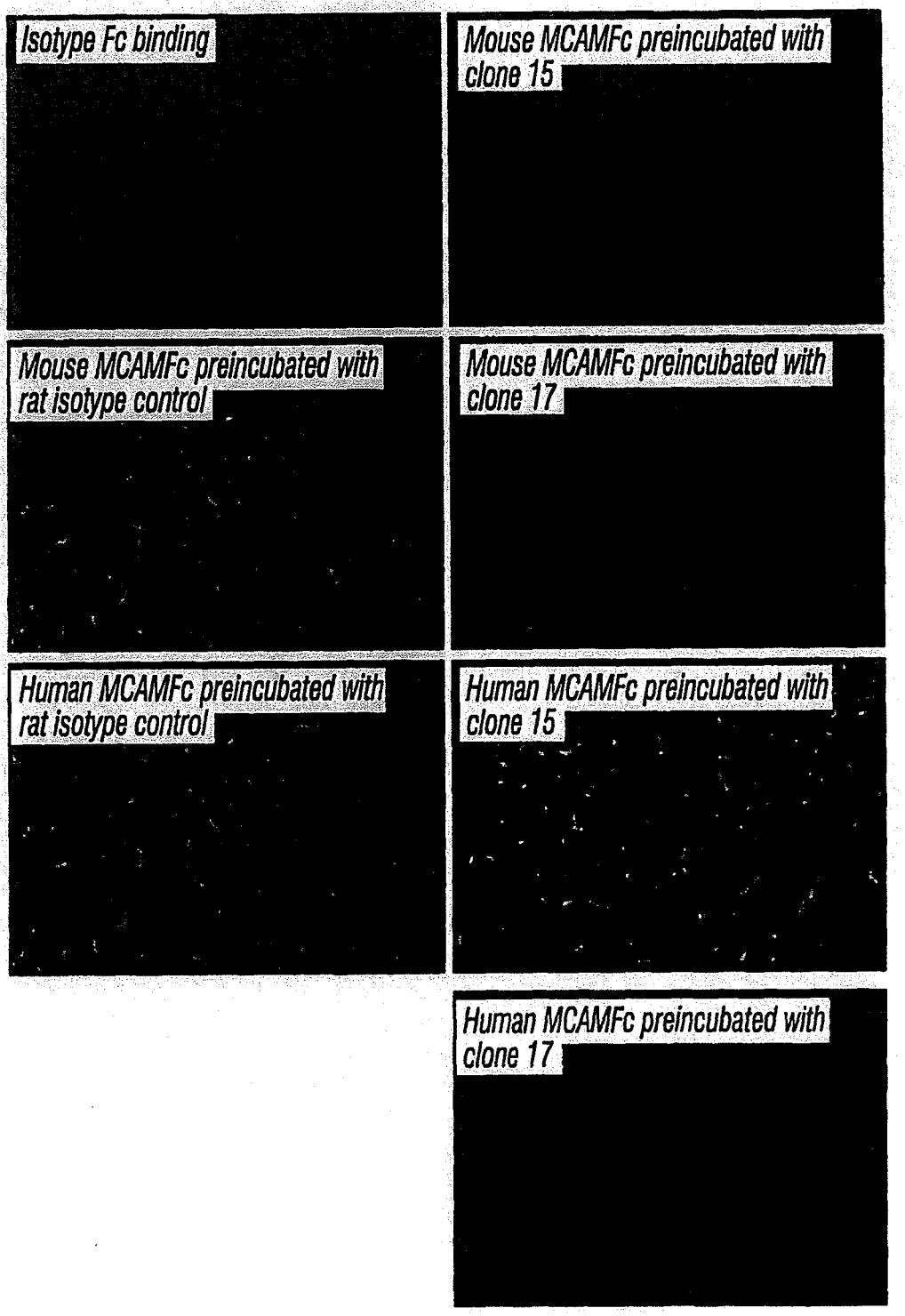

Isotype Fc binding
Mouse MCAMFc preincubated with clone 15
Mouse MCAMFc preincubated with rat isotype control
Mouse MCAMFc preincubated with clone 17
Human MCAMFc preincubated with rat isotype control
Human MCAMFc preincubated with clone 15
Human MCAMFc preincubated with clone 17

FIG. 5B

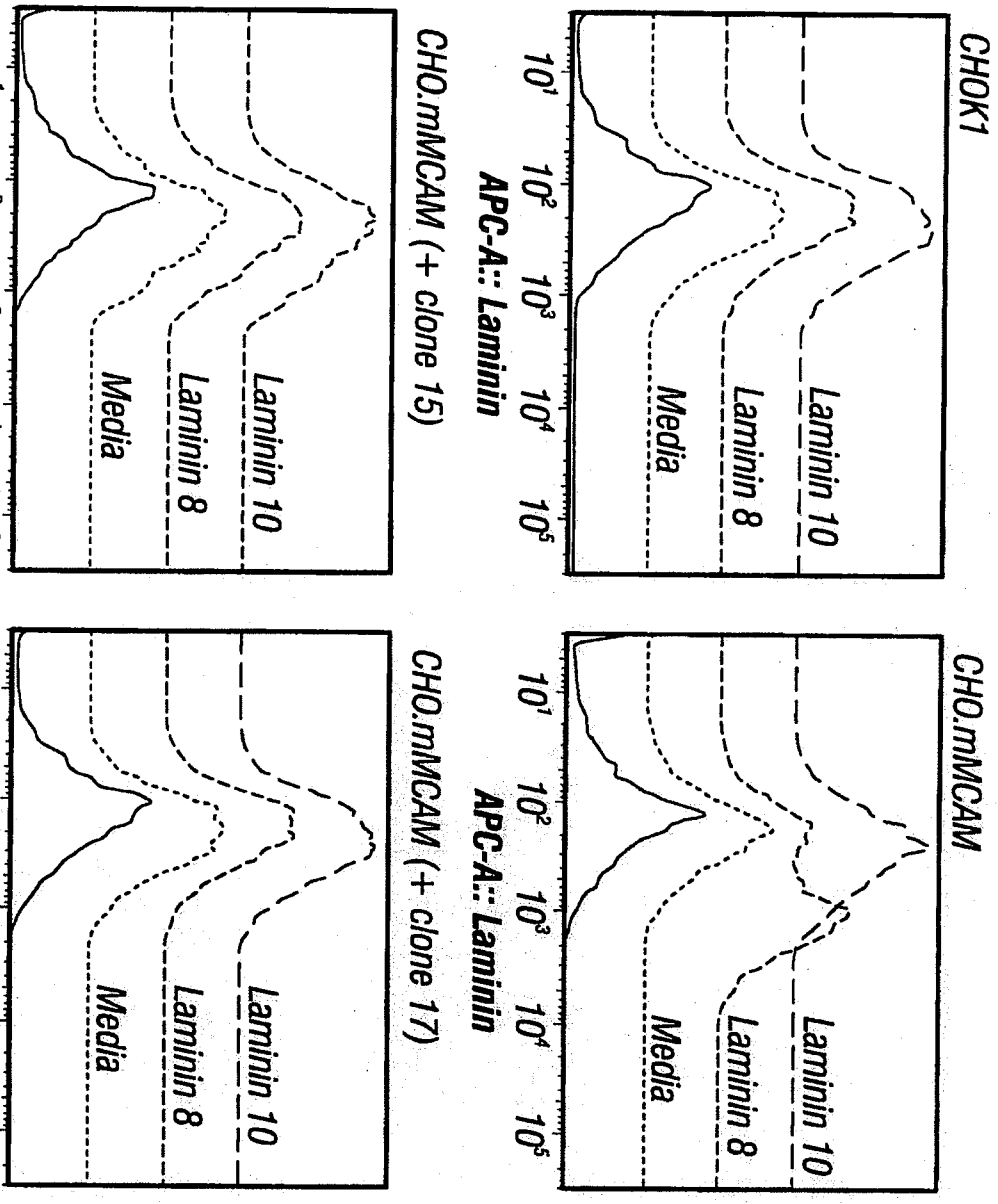

CHOK1
Laminin 10
Laminin 8
Media
10^1 10^2 10^3 10^4 10^5
APC-A:: Laminin
CHO.mMCAM
Laminin 10
Laminin 8
Media
10^1 10^2 10^3 10^4 10^5
APC-A:: Laminin
CHO.mMCAM (+ clone 15)
Laminin 10
Laminin 8
Media
10^1 10^2 10^3 10^4 10^5
APC-A:: Laminin
CHO.mMCAM (+ clone 17)
Laminin 10
Laminin 8
Media
10^1 10^2 10^3 10^4 10^5
APC-A:: Laminin

FIG. 5C

5' ATGAGGGTCCAGATTCAGTTTCTGGGGCTCCTTCTGCTCTGGATCATCAGTTGTGTCCAGTGTGATGTCCAGATGACCCAGTCTCCATCTTAT 90
Signal peptide
M R V Q I Q F L G L L L L W T S V V Q C D V Q M T Q S P S Y
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
5' CTTGCTACGTCTCCTGGAGAGACTGTTTCCATCAGTTGCAAGGCAAGTAAAAACATTGACACATACTTAGCCTGGTATCAGGAGAAACCT 180
CDR1 (SEQ ID NO:3)
L A T S P G E S Y S I S C K A S K N I D T Y L A W Y Q E K P
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
5' GGGAAACGAATAAGCCTTCTTATCTACTCTGGGTCAACTTTGCAATCTGGAACTCCATCGAGATTCAGTGGCAGTGGATCTGGTACAGAT 270
CDR2 (SEQ ID NO:4)
G K T N K L L I Y S G S T L Q S G T P S R F S G S G S G T D
61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90

FIG. 6A

5' TTCACGCTCACCATCAGAAACCTGGAGTCTGAAGATTTTGCAGTCTACTACTGTCAACAGCATAATGAATACCCCGCTCACGTTCGGTTCT 360
0 0
F T L T I R N L E S E D F A V Y Y C Q Q H N E Y P L T F G S
0 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
CDR3
(SEQ ID NO: 5)
5' GGGACCAAGCTGGAGATCAAACGGGCTGATGCTGCACCAACTGTATCCATCTTCCCACCATCCTCCGGA (SEQ ID NO: 1) 428
0 0
CKappa
G T K L E I K R A D A A P T V S I F P P S S
0 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142
(SEQ ID NO: 2)

FIG. 6A (Cont'd)

FIG. 6B

5' CAAATGACCAGTCTGAGGCCTGAGGACACGGCCACTTATTATTGTGCAAGACATCGGGGGTATAGTACGAATTTTTATCACGACGTTTTGGATGGCCTGGG
3' GTTTACTGGTCAGACTCCGGACTCCTGTGCCGGTGAATAATAACACGTTCTGTAGCCCCCATATCATGCTTAAAAATAGTGCTGCAAAACCTACCGGACCC
Q M T S L R P E D T A T Y Y C A R H R G Y S T N P Y H D V L D A W (SEQ ID NO: 10)
CDR3
101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133
5' GTCAAGGAGCTTTAGTCACTGTCTCCTCAGCTGAAACAACAGCCCCATCTGTCTATCCACTGGCTCCCTGGAACTGCTCTCAAA(SEQ ID NO: 6)
3' CAGTTCCTCGAAATCAGTGACAGAGGAGTCGACTTTGTTGTCGGGGTAGACAGATAGGTGACCGAGGGACCTTGACGAGAGTTT
483
CDR3
G Q G A L V T V S S A E T T A P S V Y P L A P G T A L K (SEQ ID NO: 7)
134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161

FIG. 6B (Cont'd)

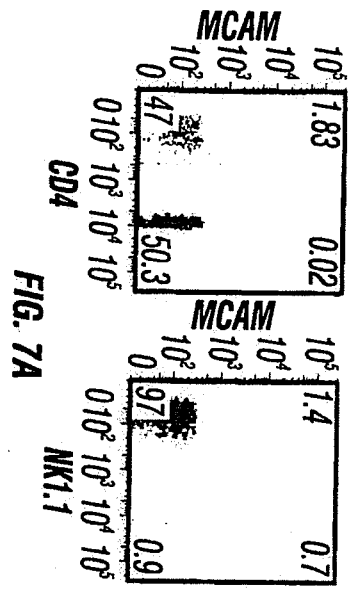

MCAM
1.83
0.02
47
50.3
CD4
MCAM
1.4
0.7
97
0.9
NK1.1

FIG. 7A

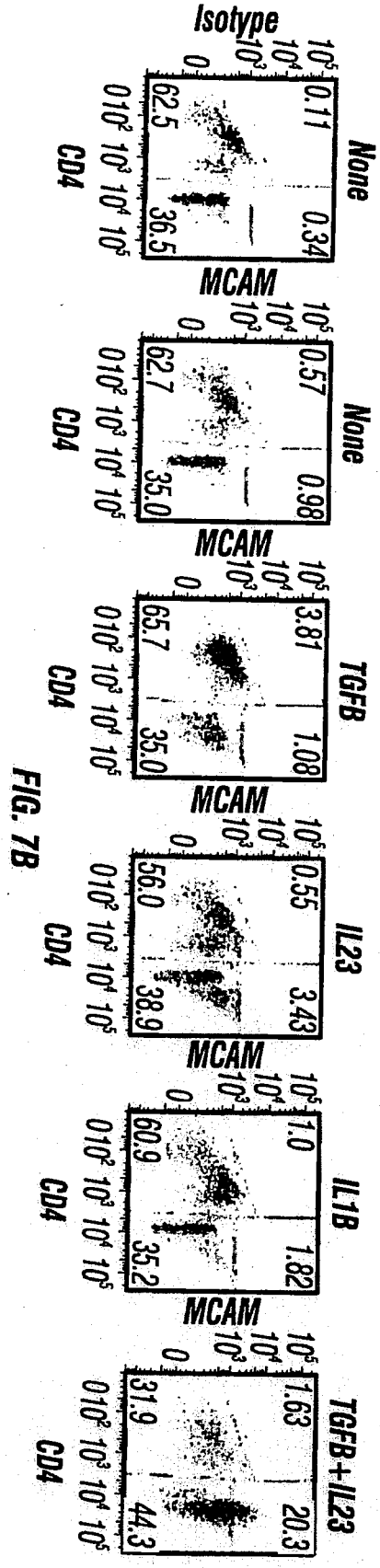

Isotype
0.11
62.5
0.34
36.5
None
MCAM
0.57
62.7
0.98
35.0
None
MCAM
3.81
65.7
1.08
35.0
TGFB
MCAM
0.55
56.0
3.43
38.9
IL23
MCAM
1.0
60.9
1.82
35.2
IL1B
MCAM
1.63
31.9
20.3
44.3
TGFB+IL23
CD4

FIG. 7B

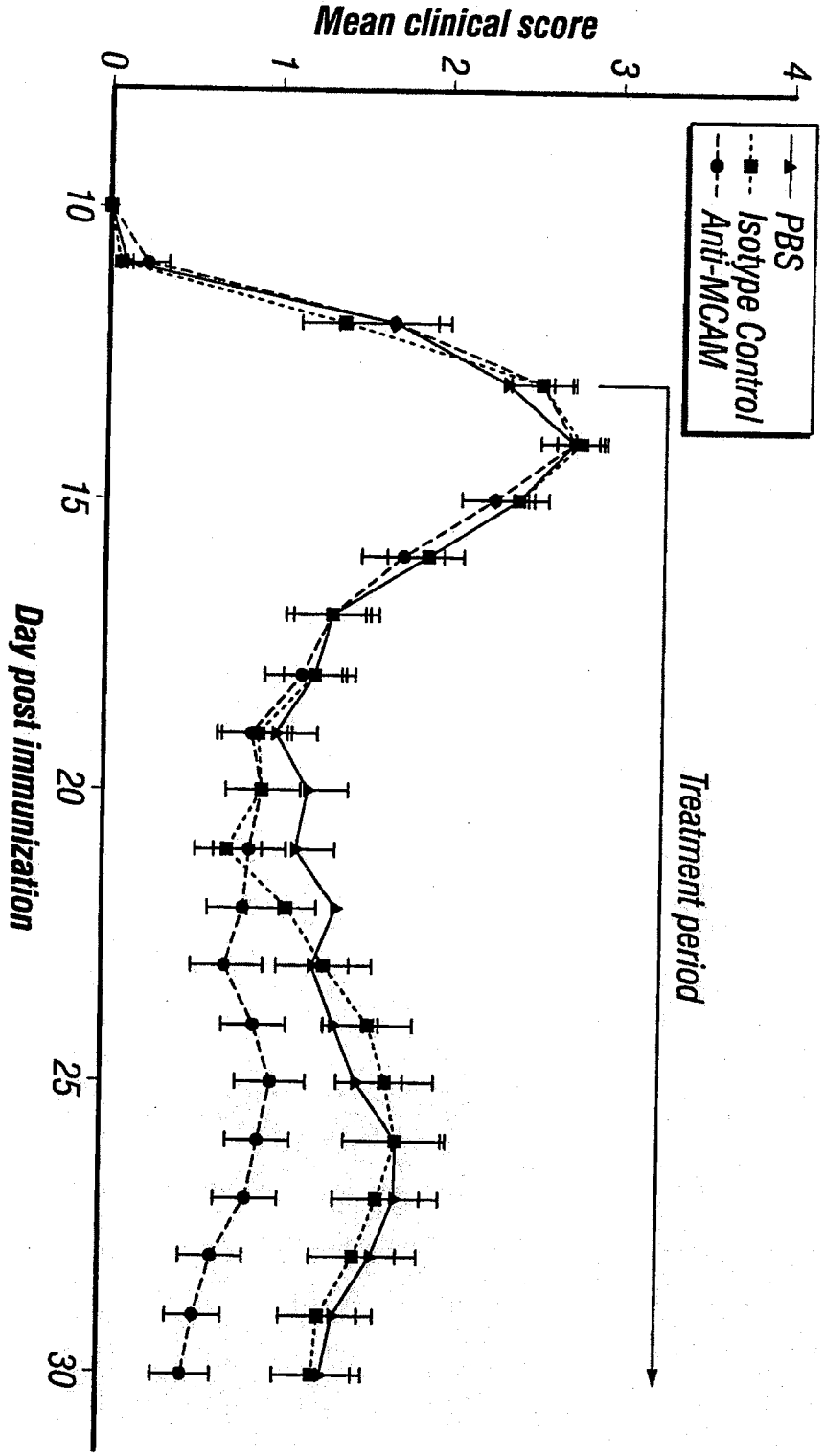

Mean clinical score
0
1
2
3
4
10
15
20
25
30
Day post immunization
PBS
Isotype Control
Anti-MCAM
Treatment period

FIG. 8A

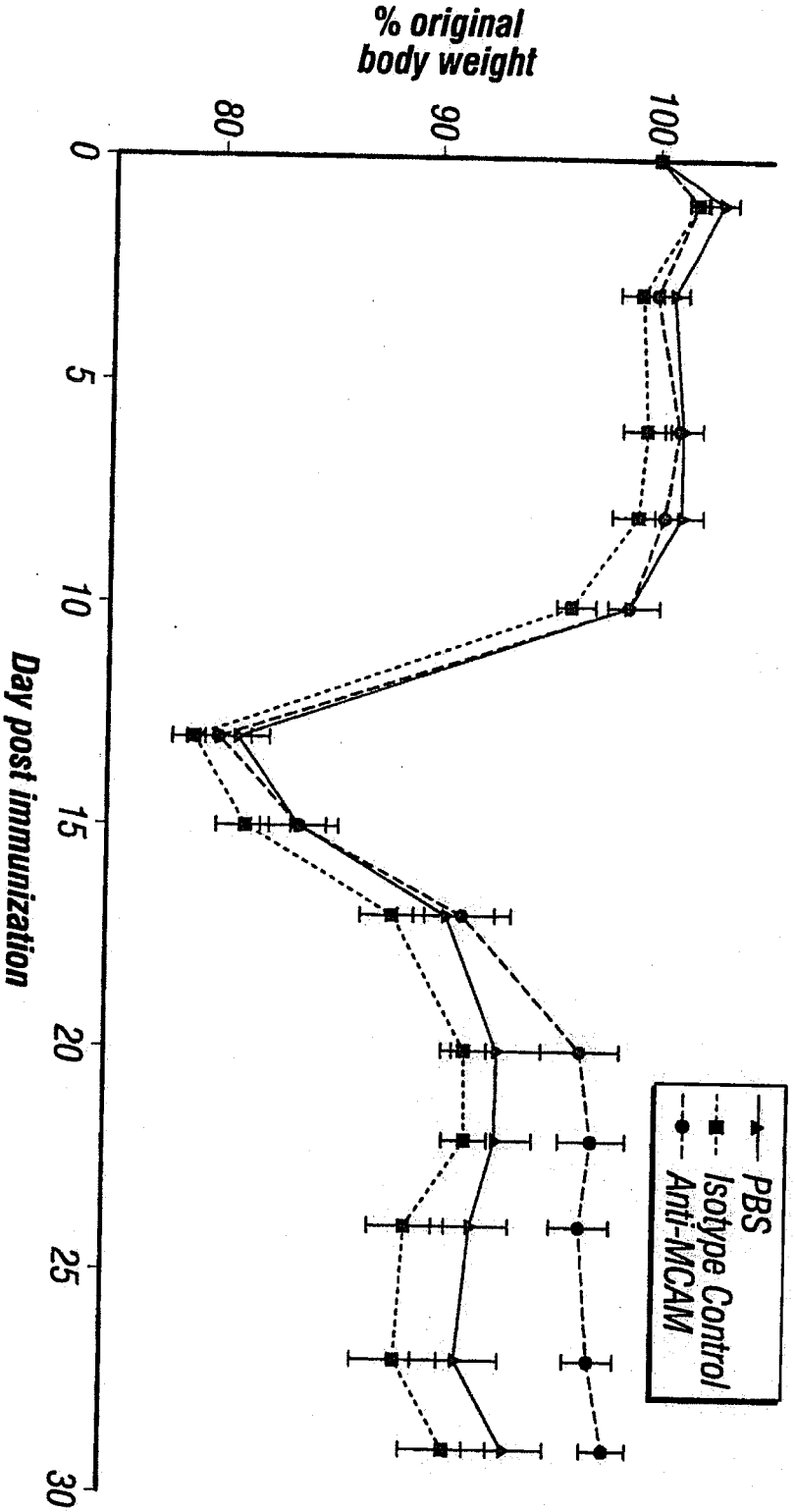

% original body weight
100
90
80
0
5
10
15
20
25
30
Day post immunization
PBS
Isotype Control
Anti-MCAM

FIG. 8B

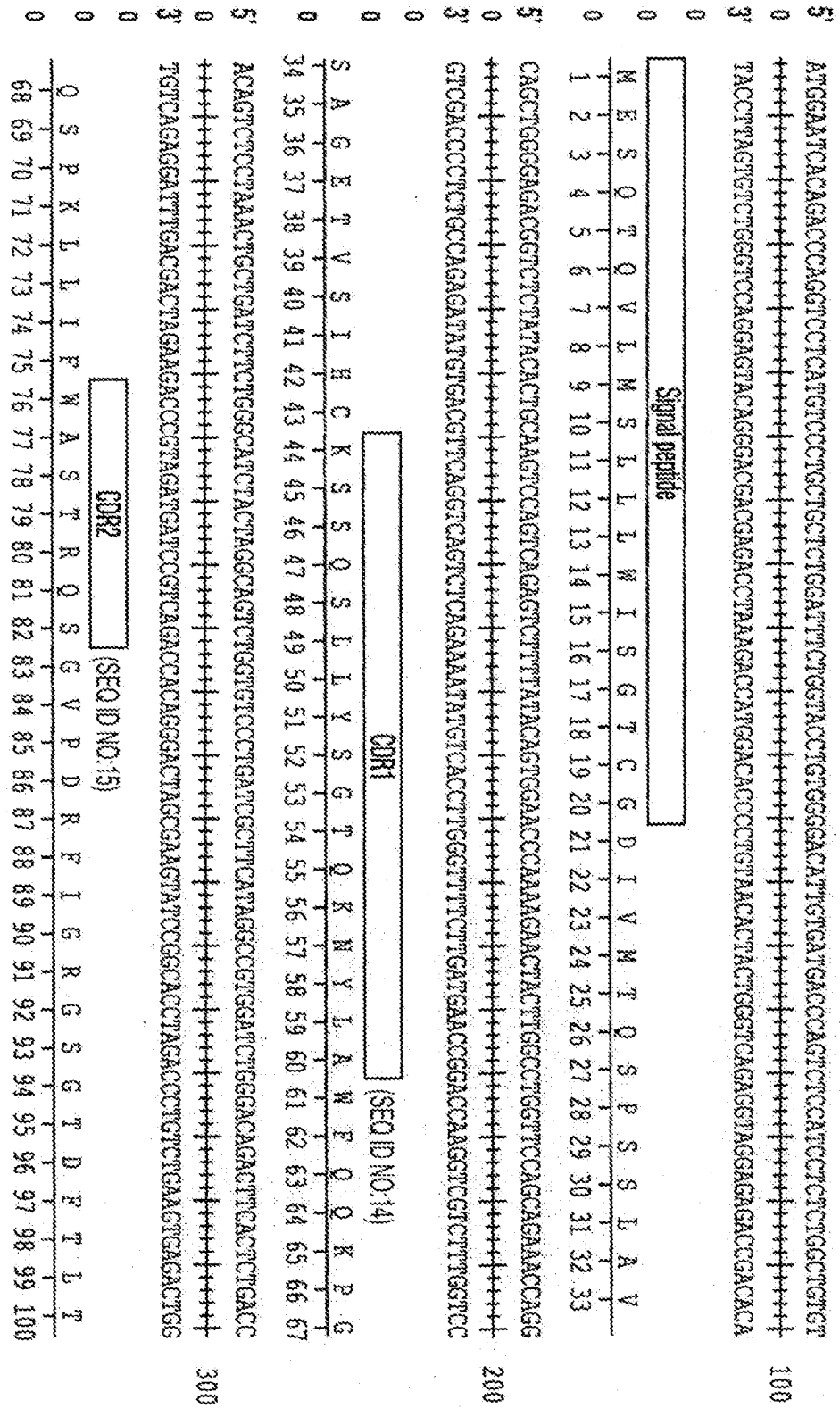


FIG. 9A

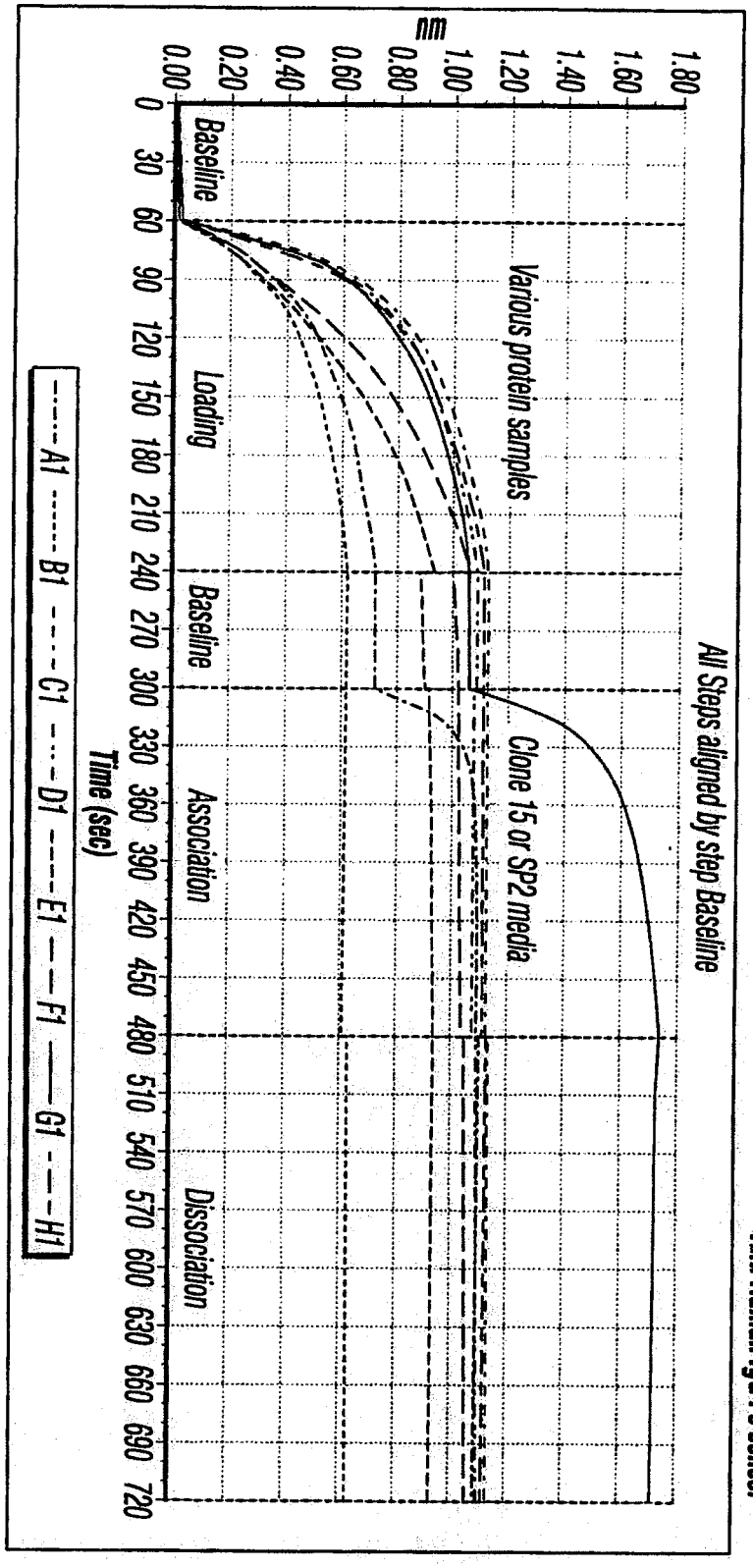
5' ATCAGCGGTGTGCAGGCAGAAGATCTGGCAATTTATTACTGTCAACAATATTATGATACTCTCACGGACAGCTTTGGAGGGGGACCAAGCTGGAACTGA
3' TAGTCGCCACACGTCCGTCTTCTAGACCGTTAAATAATGACAGTTGTTATAATACTATGAGAGTGCCTGTGCAAACCTCGCCCCTGGTTCGACCTTGACT
I S G V Q A E D L A I Y Y C Q Q Y Y D T L T D T F G A G T K L E L
CDR3
(SEQ ID NO:16)
101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133
5' AACGGGCCTGATGCTGCACCAACTGTATCTATCTTCCCACCATCCAACGGAACAGTTAGCAACTGGAGGTGCCTCA (SEQ ID NO:12)
3' TTGCCCGACTACGACGTGGTTGACATAGATAGAAGGGTGGTAGGTTGCCTTGTCAATCGTTGACCTCCACGGAGT
K R A D A A P T V S I F P P S T E Q L A T G G A S (SEQ ID NO:13)
134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158

FIG. 9A (Cont'd)

FIG. 9B

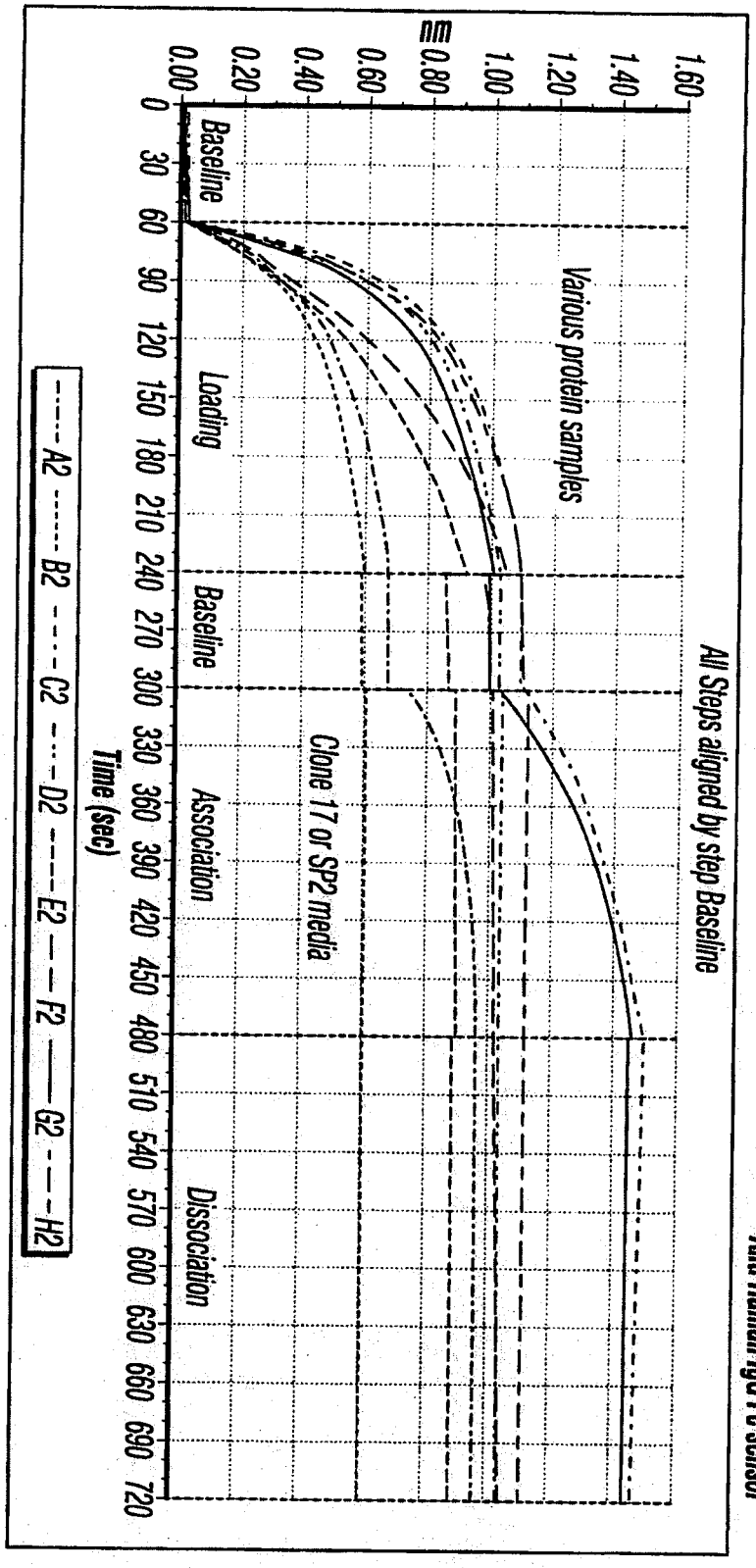
5' CAAATGGACAGTCTGAGGCCTGAGGACACGGCCACTTATTACTGTGCAAGACGGGGAGCAGCTATGGGGGGTGTTATGGATGCCTGGGGTCAAGGAACCTT
0
400
3' GTTTACCTGTCAGACTCCGGACTCCTGTGCCGGTGAATAATGACACGTTCTGCCCCTCGTCGATACCCCCCACAATACCTACGGACCCCAGTTCCTTGAA
0
0
CDR3
(SEQ ID NO: 21)
Q M D S L R P E D T A T Y Y C A R R G A A M G G V M D A W G Q G T
0
101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133
5' CAGTCACTGTCTCCTCAGCTGAAACAACAGCCCCATCTGTCTATCCACTGGCTCCCTGGAACTGCCTCTCA (SEQ ID NO: 17)
0
469
3' GTCAGTGACAGAGGAGTCGACTTTGTTGTCGGGGTAGACAGATAGGTGACCGAGGACCTTGACGACAGT
0
S V T V S S A E T T A P S V Y P L A P G T A L (SEQ ID NO: 18)
0
134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156

FIG. 9B (Cont'd)



A1 - FL protein, clone 15, B1 - FL protein, SP2 media, C1 - Ig1 domain, clone 15, D1 - Ig1 domain, SP2 media
E1 - Ig2 domain, clone 15, F1 - Ig2 domain, SP2 media, G1 - Ig1-2A domain, clone 15, H1 - Ig1-2A domain, SP2 media

FIG. 10A



A1- FL protein, clone 17, B1 - FL protein, SP2 media, C1 - Ig1 domain, clone 17, D1 - Ig1 domain, SP2 media
E1- Ig2 domain, clone 17, F1 - Ig2 domain, SP2 media, G1 - Ig1-2A domain, clone 17, H1 - Ig1-2A domain, SP2 media

FIG. 10B

MGLPRLVCAFLLAACCCPRVAGVPGEAEQPAPELVEVEVGSTALLKCGLSQSQGNLSHVDWFSVHKEKR
TLIFRVRQGQGQSEPGEYEQRLSLQDRGATLALTQVTPQDERIFLCQGKRPRSQEYRIQLRVYKAPEEPN
IQVNPLGIPVNSKEPEEVATCVGRNGYPIPQVIWYKNGRPLKEEKNRVHIQSSQTVESSGLYTLQSILKA
QLVKEDKDAQFYCELNYRLPSGNHMKESREVTVPVFYPTEKVWLEVEPVGMLKEGDRVEIRCLADGNPPP
HFSISKQNPSTREAEEETTNDNGVLVLEPARKEHSGRYECQAWNLDTMISLLSEPQELLVNYVSDVRVSP
AAPERQEGSSLTLTCEAESSQDLEFQWLREETDQVLERGPVLQLHDLKREAGGYRCVASVPSIPGLNRT
QLVKLAIFGPPWMAFKERKVWVKENMVLNLSCEASGHPRPTISWNVNGTASEQDQDPQRVLSTLNVLVTP
ELLETGVECTASNDLGKNTSILFLELVNLTTLTPDSNTTTGLSTSTASPHTRANSTSTERKLPEPESRGV
VIVAVIVCILVLAVLGAVLYFLYKKGKLPCRRSGKQEITLPPSRKTELVVEVKSDKLPEEMGLLQGSSGD
KRAPGDQGEKYIDLRH (SEQ ID NO: 11)

FIG. 11A

FIG. 11B

malssawrsv lplwllwsaa csraasgddn afpfdiegss avgrqdppet seprvalgrl ppaaekcnag
ffhtlsgecv pcdcngnsne cldgsgycvh cqrnttgehc ekcldgyigd sirgapqfcq pcpcplphla
nfaescyrkn gavrcicnen yagpncerca pgyygnplli gstckkcdcs gnsdpnlife dcdevtgqcr
nclrnttgfk cercapgyyg dariakncav cncgggpcds vtgecleegf epptgmdcpt iscdkcvwdl
tddlrlaals ieegksgvls vssgaaahrh vneinatiyl lktklseren qyalrkiqin naentmksll
sdveelveke nqasrkgqlv qkesmdtinh asqlveqahd mrdkiqeinn kmlyygeehe lspkeisekl
vlaqkmleei rsrqpfftqr elvdeeadea yellsqaesw qrlhnetrtl fpvvleqldd ynaklsdlqe
aldqalnyvr daedmnrata arqrdhekqq ervreqmevv nmslstsads lttprltlse lddiiknasg
iyaeidgaks elqvklsnls nlshdlvqea idhaqdlqqe anelsrklhs sdmnglvqka ldasnvyeni
vnyvseanet aefalnttdr iydavsgidt qiiyhkdese nllnqarelq akaesssdea vadtsrrvgg
alarksalkt rlsdavkqlq aaergdaqqr lgqsrlitee anrttmevqq atapmannlt nwsqnlqhfd
ssayntavns ardavrnlte vvpqlldqlr tveqkrpasn vsasiqrire liaqtrsvas kiqvsmmfdg
qsavevhsrt smddlkafts lslymkppvk rpeltetadq filylgskna kkeymglaik ndnlvyvvnl
gtkdveipld skpvsswpay fsivkiervg khgkvfltvp slsstaeekf ikkgefsgdd slldldpedt
vfyvggvpsn fklptslnlp gfvgclelat lnndvislyn fkhiynmdps tsvpcardkl aftqsraasy
ffdgsgyavv rditrrgkfg qvtrfdievr tpadnglill mvngsmffrl emrngylhvf ydfgfsggpv
hledtlkkaq indakyheis iiyhndkkmi lvvdrrhvks mdnekmkipf tdiyiggapp eilqsralra
hlpldinfrg cmkgfqfqkk dfnlleqtet lgvgygcped slisrrayfn gqsfiasiqk isffdgfegg
fnfrtlqpng llfyyasgsd vfsisldngt vimdvkgikv qsvdkqyndg lshfvissvs ptryelivdk
srvgsknptk gkieqtqase kkfyfggspi saqyanftgc isnayftrvd rdvevedfqr ytekvhtsly
ecpiessplf llhkkgknls kpkasqnkkg gkskdapswd pvalklpern tprnshchls nspraiehay
qyggtansrq efehlkgdfg aksqfsirlr trsshgmify vsdqeendfm tlflahgrlv ymfnvghkkl
kirsqekynd glwhdvifir erssgrlvid glrvleeslp pteatwkikg piylggvapg kavknvqins
iysfsgclsn lqlngasits asqtfsvtpc fegpmetgty fsteggyvvl desfniglkf eiafevrprs
ssgtlvhghs vngeylnvhm kngqvivkvn ngirdfstsv tpkqslcdgr whritvirds nvvqldvdse
vnhvvgplnp kpidhrepvf vggvpesllt prlapskpft gcirhfvidg hpvsfskaal vsgavsinsc
paa (SEQ ID NO:27)

FIG. 12A

malssawrsv lplwllwsaa csraasgddn afpfdiegss avgrqdppet seprvalgrl ppaaekcnag
ffhtlsgecv pcdcngnsne cldgsgycvh cqrnttgehc ekcldgyigd sirgapqfcq pcpcplphla
nfaescyrkn gavrcicnen yagpncerca pgyygnplli gstckkcdcs gnsdpnlife dcdevtggcr
nclrnttgfk cercapgyyg dariakncav cncgggpcds vtgecleegf epptgcdkcv wdltddirla
alsieegksg vlsvssgaaa hrhvneinat iyllktklse renqyalrki qinnaentmk sllsdveelv
ekenqasrkg qlvqkesmdt inhasqlveq ahdmrdkiqe innkmlyyge ehelspkeis eklvlaqkml
eeirsrqpff tqrelvdeea deayellsqa eswqrlhnet rtlfpvvleq lddynaklsd lqealdqaln
yvrdaedmnr ataarqrdhe kqqervreqm evvnmslsts adslttprlt lseldditkn asgiyaeidg
akselqvkls nlsnlshdlv qeaidhaqdl qqeanelsrk lhssdmnglv qkaldasnvy enivnyvsea
netaefalnt tdriydavsg idtqliyhkd esenllnqar elqakaesss deavadtsrr vggalarksa
lktrlsdavk qlqaaergda qqrlgqsrli teeanrttme vqqatapman nltnwsqnlq hfdssaynta
vnsardavrn ltevvpqlld qlrtveqkrp asnvsasiqr ireliaqtrs vaskiqvsmm fdqqsavevh
srtsmddlka ftslslymkp pvkrpeltet adqfilylgs knakkeymgl aiknднlvyv ynlgtkdvei
pldskpvssw payfsivkie rvgkhgkvfl tvpslsstae ekfikkgefs gddslldldp edtvfyvggv
psnfklptsl nlpgfvgcle latlnndvis lynfkhiynm dpstsvpcar dklaftqsra asyffdgsgy
avvrditrrg kfgqvtrfdi evrtpadngl illmvngsmf frlemrngyl hvfydfgfsg gpvhledtlk
kaqindakyh eisiiyhndk kmilvvdrrh vksmdnekmk ipftdiyigg appeilqsra lrahlpldin
frgcmkgfqf qkkdfnlleq tetlgvgygc pedslisrra yfngqsfias iqkisffdgf eggfnfrtlq
pngllfyyas gsdvfsisld ngtvimdvkg ikvgsvdkqy ndglshfvis svsptryeli vdksrvgskn
ptkgkieqtq asekkfyfgg spisaqyanf tgcisnayft rvdrdveved fqrytekvht slyecpiess
plfllhkkgk nlskpkasqn kkggkskdap swdpvalklp erntprnshc hlsnspraie hayqyggtan
srqefehlkg dfgaksqfsi rlrtrsshgm ifyvsdqeen dfmtlflahg rlvymfnvgh kklkirsqek
yndglwhdvi firerssgrl vidglrvlee slppteatwk ikgpiylggv apgkavknvq insiysfsgc
lsnlqlngas itsasqtfsv tpcfegpmet gtyfsteggy vvldesfnig lkfeiafevr prsssgtlvh
ghsvngeyln vhmkngqviv kvnngirdfs tsvtpkqslc dgrwhritvi rdsnvvqldv dsevnhvvgp
lnpkpidhre pvfvggvpes lltprlapsk pftgcirhfv idghpvsfsk aalvsgavsi nscpaa
(SEQ ID NO: 28)

FIG. 12B

Figure 13

Clone 1174.1.3 – Variable Light Chain (Nucleic Acid Sequence)

GACATTGTGCTGACACAGTCTCCTGCTTCCTTAGCTGTATCTCTGGGGCAGAGGG
CCACCATCTCATGCAGGGCCAGCAAAAGTGTCAGTACATCTGGCTATAGTTATATG
TACTGGTACCAACAGAAACCAGGACAGCCACCCAAACTCCTCATCTATCTTGCATC
CAACCTAGAATCTGGGGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTGGGACAGAC
TTCACCCTCAACATCCATCCTGTGGAGGAGGAGGATGCTGCAACCTATTACTGTCA
ACACAGTAGGGAGCTTCCATTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAAA
C (SEQ ID NO:29)

Clone 1174.1.3 – Variable Light Chain (Amino Acid Sequence)

DIVLTQSPASLAVSLGQRATISCRASKSVSTSGYSYMYWYQQKPGQPPKLLIYIASNLE
SGVPARFSGSGSGTDFTLNIHPVEEEDAATYYCQHSRELPFTFGSGTKLEIK (SEQ
ID NO:30)

Clone 1174.1.3 – CDR-L1 (Amino Acid Sequence)

RASKSVSTSGYSYMY (SEQ ID NO:31)

Clone 1174.1.3 – CDR-L2 (Amino Acid Sequence)

ASNLES (SEQ ID NO:32)

Clone 1174.1.3 – CDR-L3 (Amino Acid Sequence)

QHSRELPFT (SEQ ID NO:33)

Figure 14

Clone 1174.1.3 – Variable Heavy Chain (Nucleic Acid Sequence)

CAGATTCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAGTCA
AGATCTCCTGCAAGGCTTCTGGGTATACCTTCACAAACTATGGAATGAACTGGGTG
AAGCAGGCTCCAGGAAAGGGTTTAAAGTGGATGGGCTGGATAAACACCTACACTG
GAGAGCCAACATATGCTGATGACTTCAAGGGACGGTTTGCCTTGTCTTTGGAAACC
TCTGCCAGCACTGCCTATTTGCAGATCAACAACCTCAAAAATGAGGACATGGCTAC
ATATTTCTGTGCAAGATATAGGTATAATAAATACGAGAGGGCTATGGACTACTGGG
GTCAAGGAACCTCAGTCACCGTCTCCTCA (SEQ ID NO:34)

Clone 1174.1.3 – Variable Heavy Chain (Amino Acid Sequence)

QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMNWVKQAPGKGLKWMGWINTYTGE
PTYADDFKGRFALSLETSASTAYLQINNLKNEDMATYFCARYRYNKYERAMDYWGQG
TSVTVSS (SEQ ID NO:35)

Clone 1174.1.3 – CDR-H1 (Amino Acid Sequence)

GYTFTNYGMN (SEQ ID NO:36)

Clone 1174.1.3 – CDR-H2 (Amino Acid Sequence)

WINTYTGEPTYADDFKG (SEQ ID NO:37)

Clone 1174.1.3 – CDR-H3 (Amino Acid Sequence)

YRYNKYERAMDY (SEQ ID NO:38)

Figure 15

Clone 1414.1.2 – Variable Light Chain (Nucleic Acid Sequence)

GACATTGTGATGTCACAGTCTCCATCCTCCCTGGCTGTGTCAGCAGGAGAGAAGG
TCACTATGAGCTGCAAATCCAGTCAGAGTCTGCTCAACAGTAGCACCCGAAAGAAC
TTCTTGGCTTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATCTACTG
GGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGG
ACAGATTTCACTCTCACCATCAGCAGTGTGCAGGCTGAAGACCTGGCAGTTTATTA
CTGCAAGCAATCTTATAATCGGTACACGTTCGGAGGGGGGACCAAGCTGGAAATA
AAACG (SEQ ID NO:39)

Clone 1414.1.2 – Variable Light Chain (Amino Acid Sequence)

DIVMSQSPSSLAVSAGEKVTMSCKSSQSLLNSSTRKNFLAWYQQKPGQSPKLLIYWA
STRESGVPDRFTGSGSGTDFTLTISSVQAEDLAVYYCKQSYNRYTFGGGTKLEIK
(SEQ ID NO:40)

Clone 1414.1.2 – CDR-L1 (Amino Acid Sequence)

KSSQSLLNSSTRKNFLA (SEQ ID NO:41)

Clone 1414.1.2 – CDR-L2 (Amino Acid Sequence)

WASTRES (SEQ ID NO:42)

Clone 1414.1.2 – CDR-L3 (Amino Acid Sequence)

KQSYNRYT (SEQ ID NO:43)

Figure 16

Clone 1414.1.2 – Variable Heavy Chain (Nucleic Acid Sequence)

GAGATCCAGCTGCAGCAGACTGGACCTGAGCTGGTGAAGCCTGGGGCTTCAGTG
AAGATATCCTGCAAGGCTTCTGGTTATTCATTCACTGACTACATCATGCTCTGGGTG
AAGCAGAGCCATGGAAAGAGCCTTGAGTGGATTGGAAATATTAATCCTTACTCTGG
TAGTAGTGGCTACAATCTGAAGTTCAAGGGCAAGGCCaCATTGACTGTAGACAAAT
CTTCCAGCACAGCCTACATGCAGCTCAACAGTCTGACATCTGAGGACTCTGCAGTC
TATTACTGTGCAAGAGGGAAGGACTTTGCTATGGACTACTGGGGTCAAGGAACCT
CAGTCACCGTCTCCTCA (SEQ ID NO:44)

Clone 1414.1.2 – Variable Heavy Chain (Amino Acid Sequence)

EIQLQQTGPELVKPGASVKISCKASGYSFTDYIMLWVKQSHGKSLEWIGNINPYSGSS
GYNLKFKGKATLTVDKSSSTAYMQLNSLTSEDSAVYYCARGKDFAMDYWGQGTSVTV
SS (SEQ ID NO:45)

Clone 1414.1.2 – CDR-H1 (Amino Acid Sequence)

GYSFTDYIML (SEQ ID NO:46)

Clone 1414.1.2 – CDR-H2 (Amino Acid Sequence)

NINPYSGSSGYNLKFKG (SEQ ID NO:47)

Clone 1414.1.2 – CDR-H3 (Amino Acid Sequence)

GKDFAMD (SEQ ID NO:48)

Figure 17

Clone 1415.1.1 – Variable Light Chain (Nucleic Acid Sequence)

GACATTGTGATGACTCAGTCTCCAGCCACCCTGTCTGTGACTCCAGGAGATAGAGT
CTCTCTTTCATGCAGGGCCAGCCAGAGTATTAGCGACTACTTACACTGGTATCAAC
AAAAATCACATGAGTCTCCAAGGCTTCTCATCAAATATGCTTCCCAATCCATCTCTG
GGATCCCCTCCAGGTTCAGTGGCAGTGGATCAGGGTCAGATTTCACTCTCAGTATC
AACAGTGTGGAACCTGAAGATGTTGGAGTGTATTACTGTCAAAATGGTCACAACTT
TCCTCGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAAC (SEQ ID NO:49)

Clone 1415.1.1 – Variable Light Chain (Amino Acid Sequence)

DIVMTQSPATLSVTPGDRVSLSCRASQSISDYLHWYQQKSHESPRLLIKYASQSISGIP
SRFSGSGSGSDFTLSINSVEPEDVGVYYCQNGHNFPRTFGGGTKLEIK (SEQ ID
NO:50)

Clone 1415.1.1 – CDR-L1 (Amino Acid Sequence)

RASQSISDYLH (SEQ ID NO:51)

Clone 1415.1.1 – CDR-L2 (Amino Acid Sequence)

YASQSIS (SEQ ID NO:52)

Clone 1415.1.1 – CDR-L3 (Amino Acid Sequence)

QNGHNFPRT (SEQ ID NO:53)

Figure 18

Clone 1415.1.1 – Variable Heavy Chain (Nucleic Acid Sequence)

CAGGTCCAACTGCAGCAGCCTGGGGCTGAGCTTGTGCAGCCTGGGGCTCCAGTG
AAGCTGTCCTGCAAGGCTTCTGGCTACATTTTCACCAGCTACTGGATGAACTGGGT
GAAGCAGAGGCCTGGACGAGGCCTCGAGTGGATTGGAAGGATTGATCCTTCCGAT
AGTAAAATTCACTACAATCAAAAGTTCAAAGACAAGGCCACACTGACTGTAGACAG
ATCCTCCAGCACAGCCTACATCCAACTCGGCAGCCTGACATCTGAGGACTCTGCG
GTCTATTATTGTGCAAAAGAGGGGGGTTTACGACGGGGGGACTATGCTATGGACT
ACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA (SEQ ID NO:54)

Clone 1415.1.1 – Variable Heavy Chain (Amino Acid Sequence)

QVQLQQPGAELVQPGAPVKLSCKASGYIFTSYWMNWVKQRPGRGLEWIGRIDPSDS
KIHYNQKFKDKATLTVDRSSSTAYIQLGSLTSEDSAVYYCAKEGGLRRGDYAMDYWG
QGTSVTVSS (SEQ ID NO:55)

Clone 1415.1.1 – CDR-H1 (Amino Acid Sequence)

GYIFTSYWMN (SEQ ID NO:56)

Clone 1415.1.1 – CDR-H2 (Amino Acid Sequence)

RIDPSDSKIHYNQKFKD (SEQ ID NO:57)

Clone 1415.1.1 – CDR-H3 (Amino Acid Sequence)

EGGLRRGDYAMDY (SEQ ID NO:58)

Figure 19

Clone 1749.1.3 – Variable Light Chain (Nucleic Acid Sequence)

GACATTGTGATGTCACAGTCTCCATCCTCCCTGGCTGTGTCAGCAGGAGAGAAGG
TCACTATGAACTGCAAATCCAGTCGGAGTCTGCTCAACAGTAGAATCCGAAAGAAC
TACTTGGCTTGGTACCAGCAGAAACCAGGGCAGTCTCCTAAACTGCTGATCTACTG
GGCATCCACTAGGGAATCTGGGGTCCCTGATCGCTTCACAGGCAGTGGATCTGGG
ACAGATTTCACTCTCACCATCAGCAGTGTGCAGGCTGAAGACCTGGCAGTTTATTA
CTGCAAGCAATCTTATAATCTGCTCACGTTCGGTGCTGGGACCAAGCTGGAGCTG
AAAC (SEQ ID NO:59)

Clone 1749.1.3 – Variable Light Chain (Amino Acid Sequence)

DIVMSQSPSSLAVSAGEKVTMNCKSSRSLLNSRIRKNYLAWYQQKPGQSPKLLIYWAS
TRESGVPDRFTGSGSGTDFTLTISSVQAEDLAVYYCKQSYNLLTFGAGTKLELK
(SEQ ID NO:60)

Clone 1749.1.3 – CDR-L1 (Amino Acid Sequence)

KSSRSLLNSRIRKNYLA (SEQ ID NO:61)

Clone 1749.1.3 – CDR-L2 (Amino Acid Sequence)

WASTRES (SEQ ID NO:62)

Clone 1749.1.3 – CDR-L3 (Amino Acid Sequence)

KQSYNLLT (SEQ ID NO:63)

Figure 20

Clone 1749.1.3 – Variable Heavy Chain (Nucleic Acid Sequence)

GACGTGAAGCTGGTGGAGTCTGGGGGAGACTTAGTGAAGCCTGGAGGGTCCCTG
AAACTCTCCTGTGCAGCCTCTGGATTCACtTTCAGTAGCTATATCATGTCTTGGGTT
CGTCAGACTCCGGAGAAGAGGCTGGAGTGGGTCGCAACCATTAGTAGTGGTGGTA
GTTCCACCTACTATCCAGACAGTGTGAAGGGCCGATTCACcATCTCCAGAGACAAT
GCCAAGAACACCCTGTACCTGCAAATGAGCAGTCTGAAGTCTGAGGACACAGCCA
TGTATTACTGTACAAGAGATGATGATTACGACGTAAAGGTATTTGCTTACTGGGGC
CAAGGGACTCTGGTCACTGTCTCTGCA (SEQ ID NO:64)

Clone 1749.1.3 – Variable Heavy Chain (Amino Acid Sequence)

DVKLVESGGDLVKPGGSLKLSCAASGFTFSSYIMSWVRQTPEKRLEWVATISSGGSST
YYPDSVKGRFTISRDNAKNTLYLQMSSLKSEDTAMYYCTRDDDYDVKVFAYWGQGTL
VTVSA (SEQ ID NO:65)

Clone 1749.1.3 – CDR-H1 (Amino Acid Sequence)

GFTFSSYIMS (SEQ ID NO:66)

Clone 1749.1.3 – CDR-H2 (Amino Acid Sequence)

TISSGGSSTYYPDSVKG (SEQ ID NO:67)

Clone 1749.1.3 – CDR-H3 (Amino Acid Sequence)

DDDYDVKVFAY (SEQ ID NO:68)

Figure 21A

Clone 2120.4.19 – Variable Light Chain (Nucleic Acid Sequence)

GATATCCGGATGACTCAGTCTCCTTCACTCCTGTCTGCATCTGTGGGGGACAGAGT
CACTCTCAACTGCAAAGCAAGTCAGAATATTTATAACAGCTTAGCCTGGTATCAGC
AAAAGCTTGGAGAAGGTCCCAAAGTCCTGATTTTTAATGCAAACAGTTTGCAAACG
GGCATCCCATCAAGGTTCAGTGGCAGTGGATCTGGTACAGATTTCACACTCACCAT
CAGCAGCCTGCAGCCTGAAGATTTTGCCACATATTTCTGCCAGCAGTTTTATAGCG
GGTACACGTTTGGAGCTGGGACCAAGCTGGAACTGAAAC (SEQ ID NO:69)

Clone 2120.4.19 – Variable Light Chain (Amino Acid Sequence – Version 1)

DIRMTQSPSLLSASVGDRVTLNCKASQNIYNSLAWYQQKLGEGPKVLIFNANSLQTGIP
SRFSGSGSGTDFTLTISSLQPEDFATYFCQQFYSGYTFGAGTKLELK (SEQ ID
NO:70)

Clone 2120.4.19 – Variable Light Chain (Amino Acid Sequence – Version 2)

DIQVTQSPSLLSASVGDRVTLNCKASQNIYNSLAWYQQKLGEGPKVLIFNANSLQTGIP
SRFSGSGSGTDFTLTISSLQPEDFATYFCQQFYSGYTFGAGTKLELK (SEQ ID
NO:71)

Clone 2120.4.19 – Variable Light Chain (Amino Acid Sequence – Version 3)

DIVLTQSPSLLSASVGDRVTLNCKASQNIYNSLAWYQQKLGEGPKVLIFNANSLQTGIP
SRFSGSGSGTDFTLTISSLQPEDFATYFCQQFYSGYTFGAGTKLELK (SEQ ID
NO:72)

Clone 2120.4.19 – CDR-L1 (Amino Acid Sequence)

KASQNIYNSLA (SEQ ID NO:73)

Figure 21B

Clone 2120.4.19 – CDR-L2 (Amino Acid Sequence)

NANSLQT (SEQ ID NO:74)

Clone 2120.4.19 – CDR-L3 (Amino Acid Sequence)

QQFYSGYT (SEQ ID NO:75)

Figure 22

Clone 2120.4.19 – Variable Heavy Chain (Nucleic Acid Sequence)

CAGGTGCAGCTGAAGGAGTCAGGACCTGGTCTGGTGCAGCCCTCACAGACCCTG
TCTCTCACCTGCACTGTCTCTGGATTCTCATTAACCAGCAATGGTGTAAGCTGGGT
TCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGATTGCAGCAATATCATCTGGTGGA
ACCACATATTATAATTCAGCGTTCAAATCCCGACTGAGCATCAGCAGGAACACCTC
CAAGAGCCAAGTTCTCTTAAAAATGAACAGTCTGCAAACTGAAGACACAGCCATGT
ACTTCTGTGCCAGACGGTATGGGTACGGGTGGTACTTTGACTTCTGGGGCCCAGG
AACCATGGTCACAGTCTCCTCA (SEQ ID NO:76)

Clone 2120.4.19 – Variable Heavy Chain (Amino Acid Sequence)

QVQLKESGPGLVQPSQTLSLTCTVSGFSLTSNGVSWVRQPPGKGLEWIAAISSGGTT
YYNSAFKSRLSISRNTSKSQVLLKMNSLQTEDTAMYFCARRYGYGWYFDFWGPGTM
VTVSS (SEQ ID NO:77)

Clone 2120.4.19 – CDR-H1 (Amino Acid Sequence)

GFSLTSNGVS (SEQ ID NO:78)

Clone 2120.4.19 – CDR-H2 (Amino Acid Sequence)

AISSGGTTYYNSAFKS (SEQ ID NO:79)

Clone 2120.4.19 – CDR-H3 (Amino Acid Sequence)

RYGYGWYFDF (SEQ ID NO:80)

Figure 23A

Clone 2107.4.10 – Variable Light Chain (Nucleic Acid Sequence – Version 1)

GACATCCGGGTGACTCAGTCTCCTTCACTCCTGTCTGCATCTGTGGGAGACAGAG
TCACTCTCAACTGCAAAGGAAGTCAGAATATTTATAAGAGCTTAGCCTGGTTTCGG
CTAAAGCGTGGAGAAGCTCCCAAGCTCCTGATTTATGATGCAAACAGTTTGCAAAC
GGGCATCCCATCAAGGTTCAGTGGCAGTGGATCTGGTACAGATTTCACACTCACC
ATCACCAGCCTACAGCCTGAAGATGTTGCCACATATTTCTGCCAGCAGTATTATAG
CGGTTACACGTTTGGAGCTGGGACCAAGCTGGAACTGAAA (SEQ ID NO:81)

Clone 2107.4.10 – Variable Light Chain (Nucleic Acid Sequence – Version 2)

GACATCCAGGTGACTCAGTCTCCTTCACTCCTGTCTGCATCTGTGGGAGACAGAGT
CACTCTCAACTGCAAAGGAAGTCAGAATATTTATAAGAGCTTAGCCTGGTTTCGGC
TAAAGCGTGGAGAAGCTCCCAAGCTCCTGATTTATGATGCAAACAGTTTGCAAACG
GGCATCCCATCAAGGTTCAGTGGCAGTGGATCTGGTACAGATTTCACACTCACCAT
CACCAGCCTACAGCCTGAAGATGTTGCCACATATTTCTGCCAGCAGTATTATAGCG
GTTACACGTTTGGAGCTGGGACCAAGCTGGAACTGAAA (SEQ ID NO:82)

Clone 2107.4.10 – Variable Light Chain (Amino Acid Sequence – Version 1)

DIRVTQSPSLLSASVGDRVTLNCKGSQNIYKSLAWFRLKRGEAPKLLIYDANSLQTGIP
SRFSGSGSGTDFTLTITSLQPEDVATYFCQQYYSGYTFGAGTKLELK (SEQ ID
NO:83)

Clone 2107.4.10 – Variable Light Chain (Amino Acid Sequence – Version 2)

DI*QV*TQSPSLLSASVGDRVTLNCKGSQNIYKSLAWFRLKRGEAPKLLIYDANSLQTGIP
SRFSGSGSGTDFTLTITSLQPEDVATYFCQQYYSGYTFGAGTKLELK (SEQ ID
NO:84)

Clone 2107.4.10 – CDR-L1 (Amino Acid Sequence)

KGSQNIYKSLA (SEQ ID NO:85)

Figure 23B

Clone 2107.4.10 – CDR-L2 (Amino Acid Sequence)

DANSLQT (SEQ ID NO:86)

Clone 2107.4.10 – CDR-L3 (Amino Acid Sequence)

QQYYSGYT (SEQ ID NO:87)

Figure 24

Clone 2107.4.10 – Variable Heavy Chain (Nucleic Acid Sequence)

CAGGTGCAGCTGAAGGAGTCAGGACCTGGTCTGGTGCAGTCCTCACAGACCCTGT
CTCTCACCTGCACTGTCTCTGGATTCTCATTAACCAGTAATGGTGTAAGCTGGGTT
CGCCAGCCTCCAGGAAAGGGTCTGGAGTGGATTGCAGCAATATCAAGTGGTGGAA
GCACATATTATAATTCAGCGTTCAAATCCCGACTGAGCATCAGCAGGAACACCTCC
AAGAGCCAAGTTCTCTTAAAAATGAACAGTCTGCAAACTGAAGACACAGGCATGTA
CTTCTGTGCCAGACATAGACCGTTCTACTTTGATTACTGGGGCCAAGGAGTCATGG
TCACAGTCTCCTCA (SEQ ID NO:88)

Clone 2107.4.10 – Variable Heavy Chain (Amino Acid Sequence)

QVQLKESGPGLVQSSQTLSLTCTVSGFSLTSNGVSWVRQPPGKGLEWIAAISSGGST
YYNSAFKSRLSISRNTSKSQVLLKMNSLQTEDTGMYFCARHRPFYFDYWGQGVMVTV
SS (SEQ ID NO:89)

Clone 2107.4.10 – CDR-H1 (Amino Acid Sequence)

GFSLTSNGVS (SEQ ID NO:90)

Clone 2107.4.10 – CDR-H2 (Amino Acid Sequence)

AISSGGSTYYNSAFKS (SEQ ID NO:91)

Clone 2107.4.10 – CDR-H3 (Amino Acid Sequence)

HRPFYFDY (SEQ ID NO:92)

CDR-H1
CDR-H2
CDR-H3
1749.1.3_VH_pro
h1749VH1
h1749VH2
U96282_VH
1749.1.3_VH_pro
h1749VH1
h1749VH2
U96282_VH
FIG. 25A
CDR-L1
CDR-L2
CDR-L3
1749.1.3_VL_pro
h1749VL1
h1749VL2
X02990_VL
1749.1.3_VL_pro
h1749VL1
h1749VL2
X02990_VL
FIG. 25B

```
                                                                 CDR-H1               CDR-H2
                                                                *      *          *                *
2107.4.10.18_VH_topo_pro  QVQLKESGPGLVQSSQTLSLTCTVSGFSLTSN--GVSWVRQPPGKGLEWIAAISSGGSTYYNSAFKSRLS 68
h2107_VH1                 QVTLKESGPVLVKPTETLTLTCTVSGFSLTSN--GVSWVRQPPGKALEWIAAISSGGSTYYNSAFKSRLT 68
h2107_VH2                 QVTLKESGPVLVKPTETLTLTCTVSGFSLTSN--GVSWVRQPPGKALEWIAAISSGGSTYYNSAFKSRLS 68
h2107_VH3                 QVTLKESGPVLVKPTETLTLTCTVSGFSLTSN--GVSWVRQPPGKALEWIAAISSGGSTYYNSAFKSRLT 68
h2107_VH4                 QVTLKESGPVLVKPTETLTLTCTVSGFSLTSS--GVSWVRQPPGKALEWIAAISSGGSTYYNSAFKSRLT 68
h2107_VH5                 QVTLKESGPVLVKPTETLTLTCTVSGFSLTSQ--GVSWVRQPPGKALEWIAAISSGGSTYYNSAFKSRLT 68
h2107_VH6                 QVTLKESGPVLVKPTETLTLTCTVSGFSLTSN--AVSWVRQPPGKALEWIAAISSGGSTYYNSAFKSRLT 68
AF062133_VH               QVTLKESGPVLVKPTETLTLTCTVSGFSLSNARMGVSWIRQPPGKALEWLAHIFSNDEKSYSTSLKSRLT 70

                           **
2107.4.10.18_VH_topo_pro  ISPNTSKSQVLLKMNSLQTEDTGMYFCARHRP-------------F-YFDYWGQGVMVTVSS 116 (SEQ ID NO: 101)
h2107_VH1                 ISRDTSKSQVVLTMTNMDPVDTATYYCARHRP-------------F-YFDYWGQGTLVTVSS 116 (SEQ ID NO: 102)
h2107_VH2                 ISRDTSKSQVVLTMTNMDPVDTATYYCARHRP-------------F-YFDYWGQGTLVTVSS 116 (SEQ ID NO: 103)
h2107_VH3                 ISRNTSKSQVVLTMTNMDPVDTATYYCARHRP-------------F-YFDYWGQGTLVTVSS 116 (SEQ ID NO: 104)
h2107_VH4                 ISRDTSKSQVVLTMTNMDPVDTATYYCARHRP-------------F-YFDYWGQGTLVTVSS 116 (SEQ ID NO: 105)
h2107_VH5                 ISRDTSKSQVVLTMTNMDPVDTATYYCARHRP-------------F-YFDYWGQGTLVTVSS 116 (SEQ ID NO: 106)
h2107_VH6                 ISRDTSKSQVVLTMTNMDPVDTATYYCARHRP-------------F-YFDYWGQGTLVTVSS 116 (SEQ ID NO: 107)
AF062133_VH               ISKDTSKSQVVLTMTNMDPVDTATYYCARIGESASDRYCSGGSCFGWFDPWGQGTLVTVSS 131 (SEQ ID NO: 108)
                                                                   CDR-H3
```

FIG. 26A

```
                                                  CDR-L1              CDR-L2
                                               *            * *               *
2107.L7-6_pro             DIQVTQSPSLLSASVGDRVTLNCKGSQNIYKSLAWFRLKRGEAPKLLIYDANSLQTGIPSRFSGSGSGTD 70
h2107_VL1                 DIQMTQSPSSLSASVGDRVTITCKGSQNIYKSLAWFQQKPGKVPKLLIYDANSLQTGIPSRFSGSGSGTD 70
h2107_VL2                 DIQMTQSPSSLSASVGDRVTITCKGSQNIYKSLAWFQLKPGKVPKLLIYDANSLQTGIPSRFSGSGSGTD 70
h2107_VL3                 DIQMTQSPSSLSASVGDRVTINCKGSQNIYKSLAWFQQKPGKVPKLLIYDANSLQTGIPSRFSGSGSGTD 70
U86803_VL                 DIQMTQSPSSLSASVGDRVTITCRASQGISNYLAWYQQKPGKVPKLLIYAASTLQSGVPSRFSGSGSGTD 70

2107.L7-6_pro             FTLTITSLQPEDVATYFCQQYYSG-YTFGAGTKLELK 106 (SEQ ID NO: 109)
h2107_VL1                 FTLTISSLQPEDVATYYCQQYYSG-YTFGGGTKVEIK 106 (SEQ ID NO: 110)
h2107_VL2                 FTLTISSLQPEDVATYYCQQYYSG-YTFGGGTKVEIK 106 (SEQ ID NO: 111)
h2107_VL3                 FTLTISSLQPEDVATYYCQQYYSG-YTFGGGTKVEIK 106 (SEQ ID NO: 112)
U86803_VL                 FTLTISSLQPEDVATYYCQKYNSAPPLFGGGTKVEIK 107 (SEQ ID NO: 113)
                                              CDR-L3
```

FIG. 26B

FIG. 27A

FIG. 27B

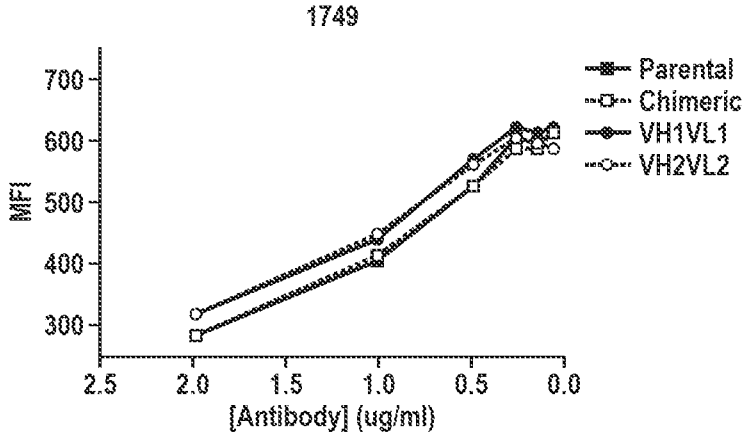


FIG. 28A

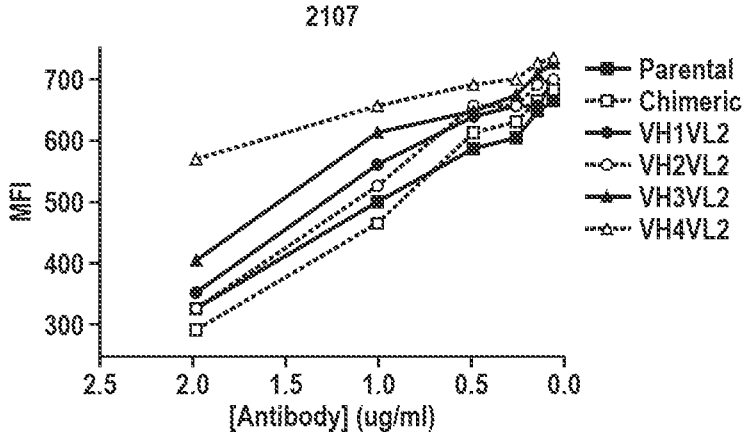


FIG. 28B

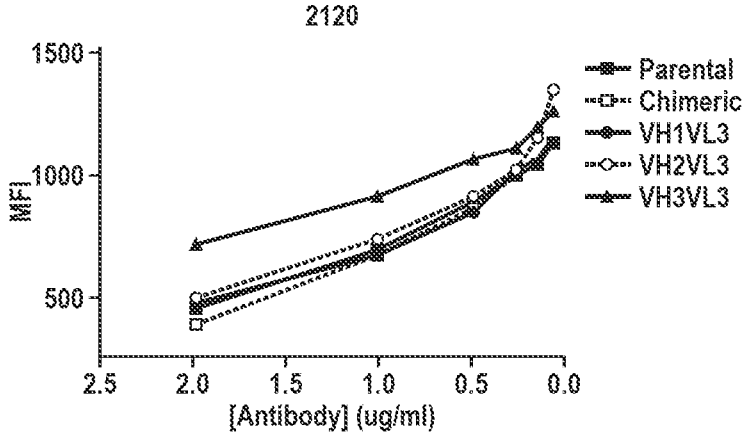


FIG. 28C

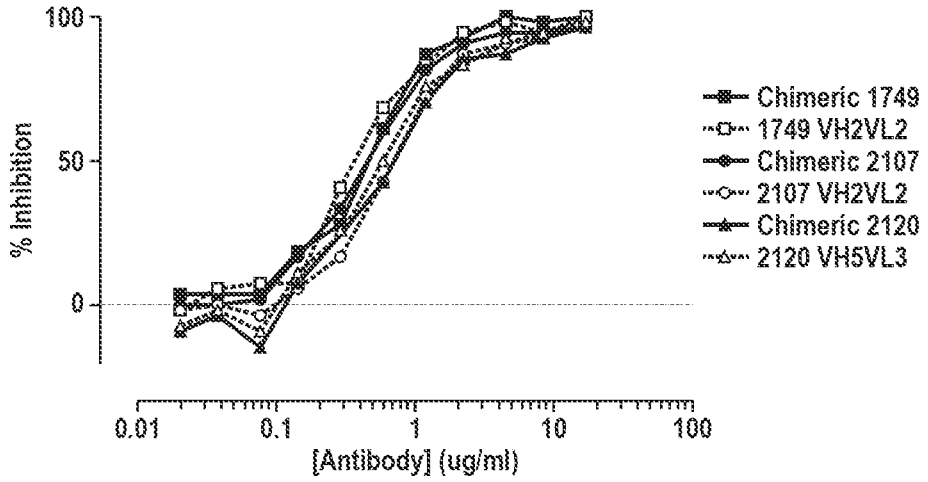


FIG. 29A

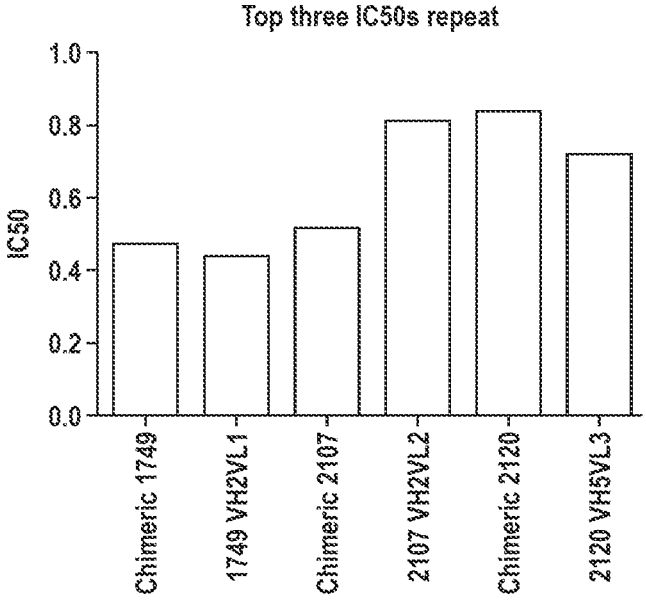


FIG. 29B

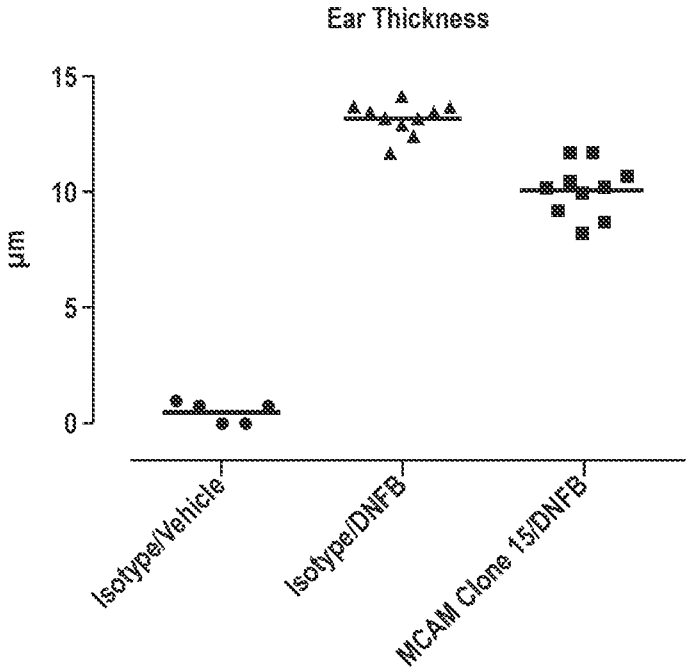

Ear Thickness
15
10
5
0
µm
Isotype/Vehicle
Isotype/DNFB
MCAM Clone 15/DNFB

FIG. 30

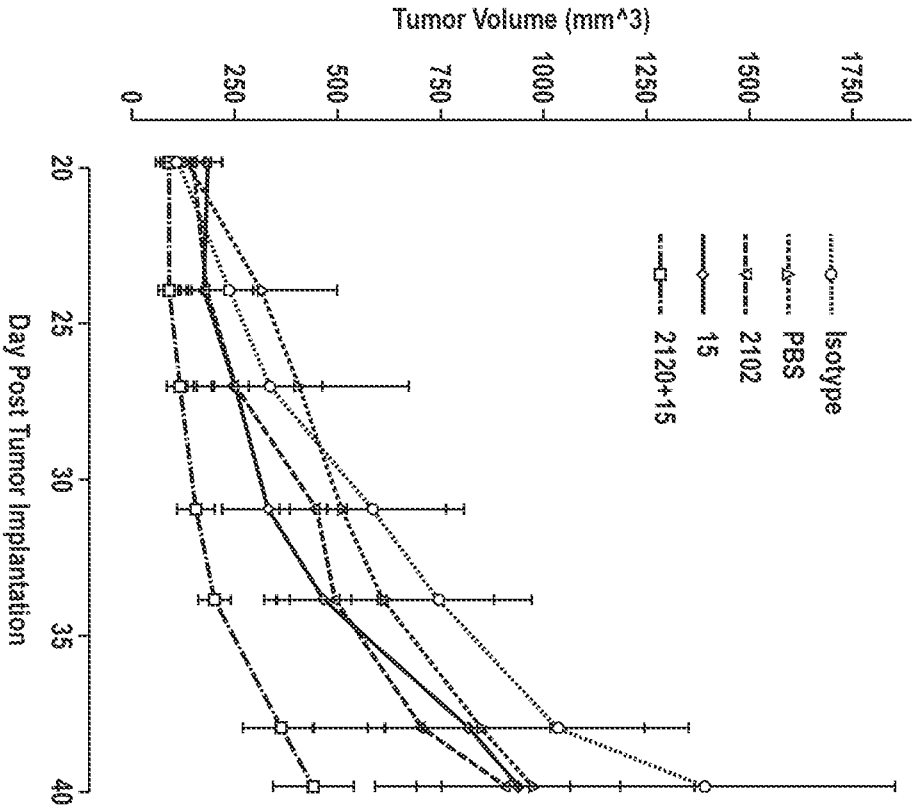


FIG. 31A

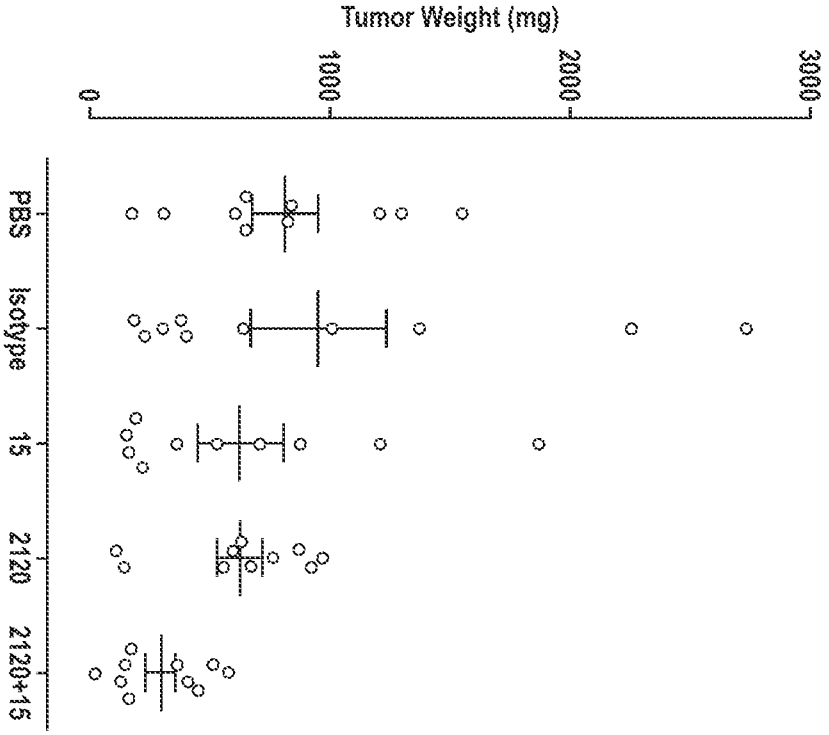


FIG. 31B