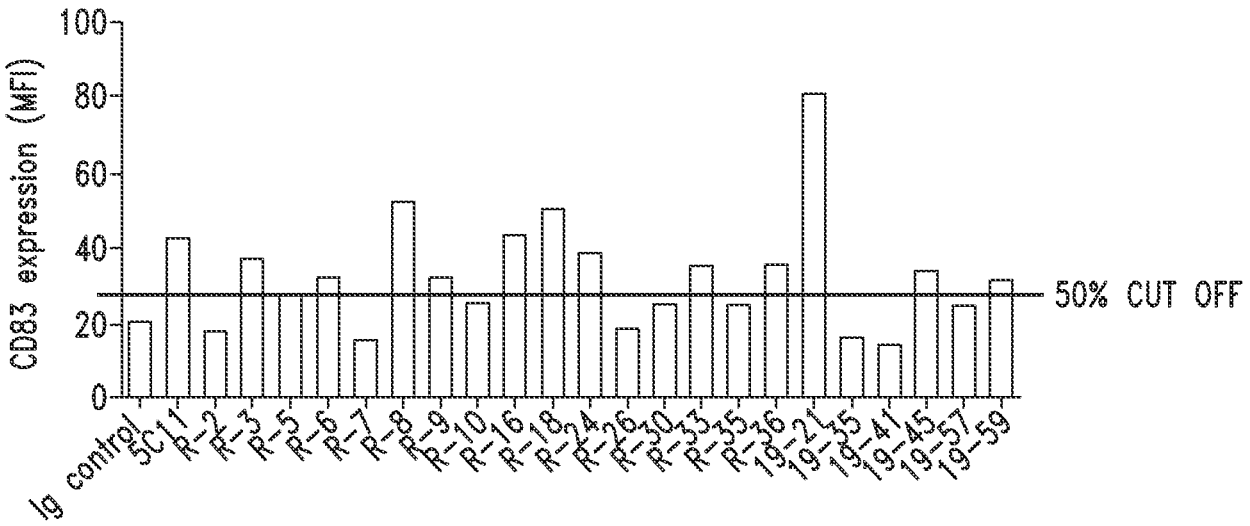

CD83 expression (MFI)
100
80
60
40
20
0
50% CUT OFF
Ig control
5C11
R-2
R-3
R-5
R-6
R-7
R-8
R-9
R-10
R-16
R-18
R-24
R-26
R-30
R-33
R-35
R-36
19-21
19-35
19-41
19-45
19-57
19-59

FIG. 1A

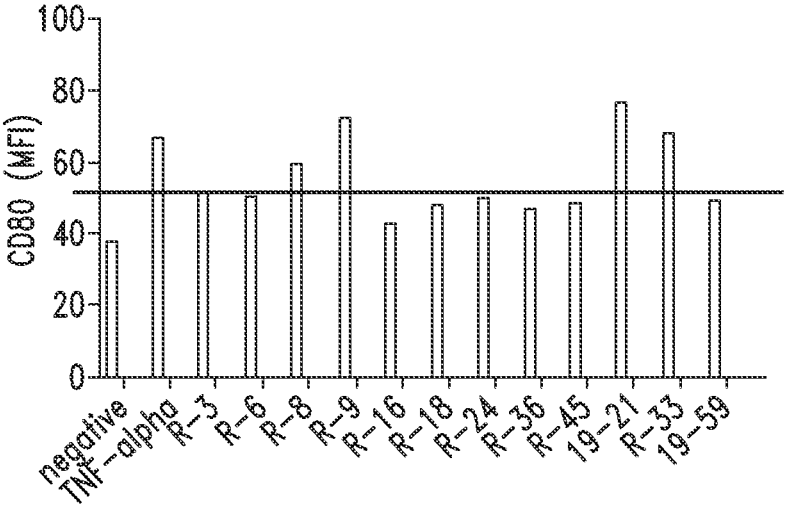

CD80 (MFI)
100
80
60
40
20
0
negative
TNF-alpha
R-3
R-6
R-8
R-9
R-16
R-18
R-24
R-36
R-45
19-21
R-33
19-59

FIG. 1B

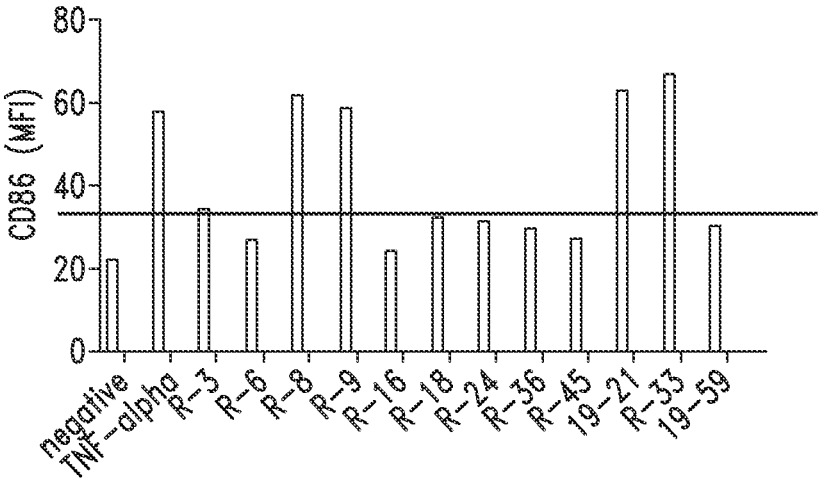

CD86 (MFI)
80
60
40
20
0
negative
TNF-alpha
R-3
R-6
R-8
R-9
R-16
R-18
R-24
R-36
R-45
19-21
R-33
19-59

FIG. 1C

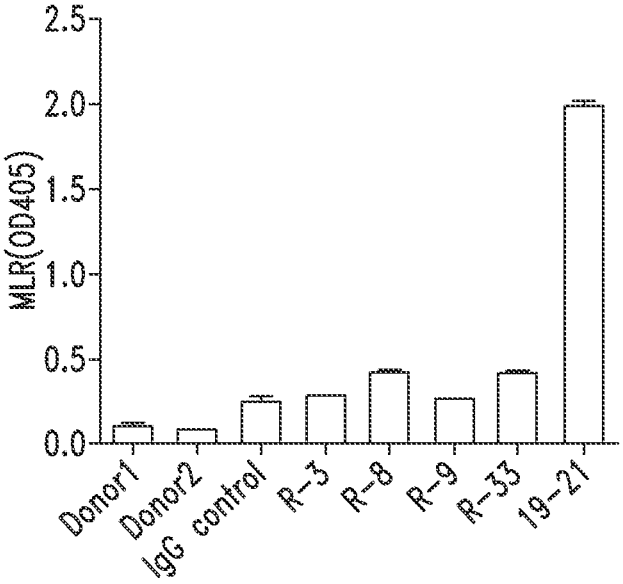

MLR(OD405)
2.5
2.0
1.5
1.0
0.5
0.0
Donor1
Donor2
IgG control
R-3
R-8
R-9
R-33
19-21

FIG. 1D

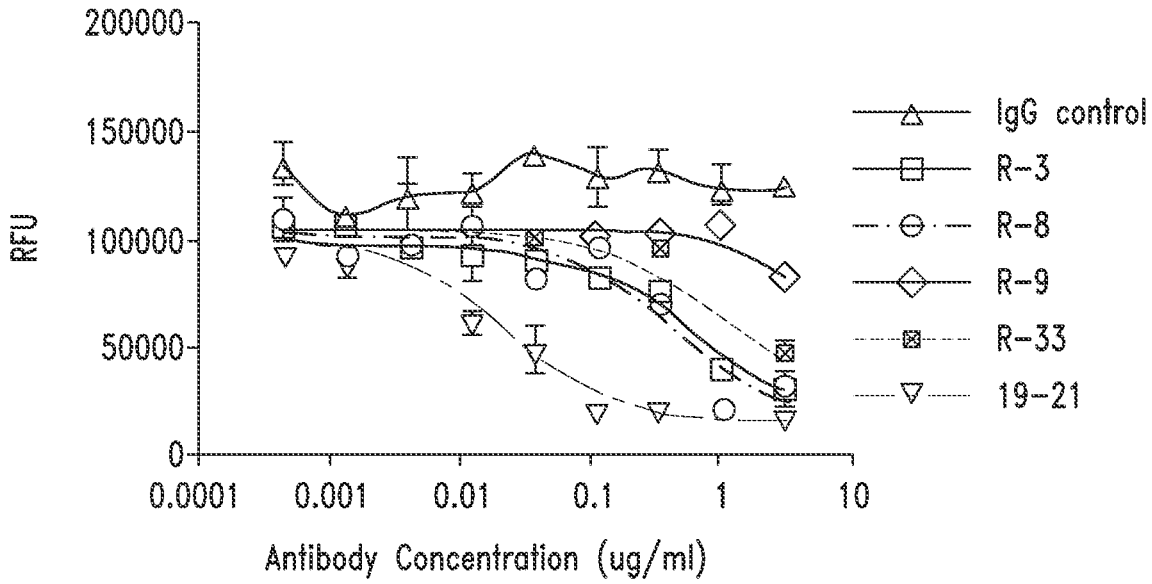

200000
150000
100000
50000
0
RFU
0.0001
0.001
0.01
0.1
1
10
Antibody Concentration (ug/ml)
IgG control
R-3
R-8
R-9
R-33
19-21

FIG. 2

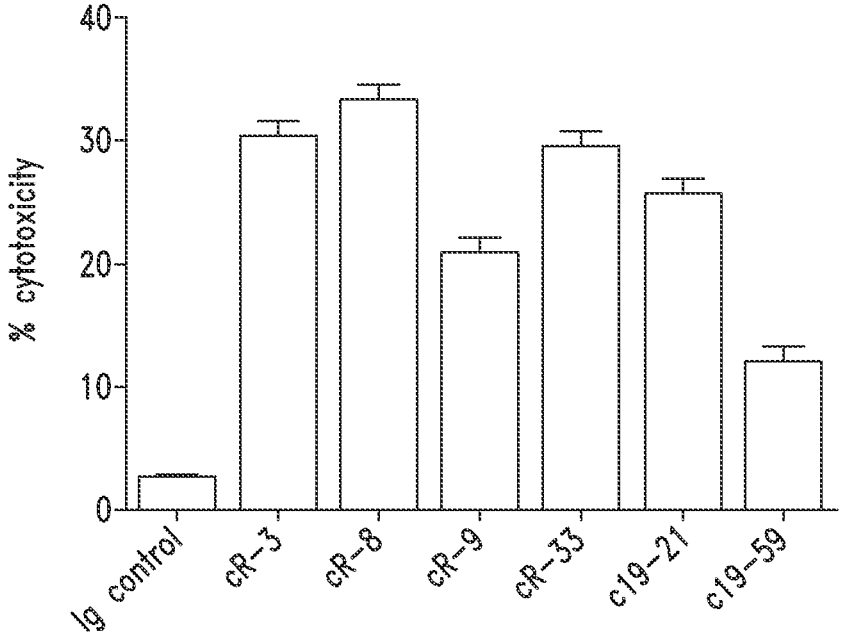

40
30
20
10
0
% cytotoxicity
Ig control
cR-3
cR-8
cR-9
cR-33
c19-21
c19-59

FIG. 3

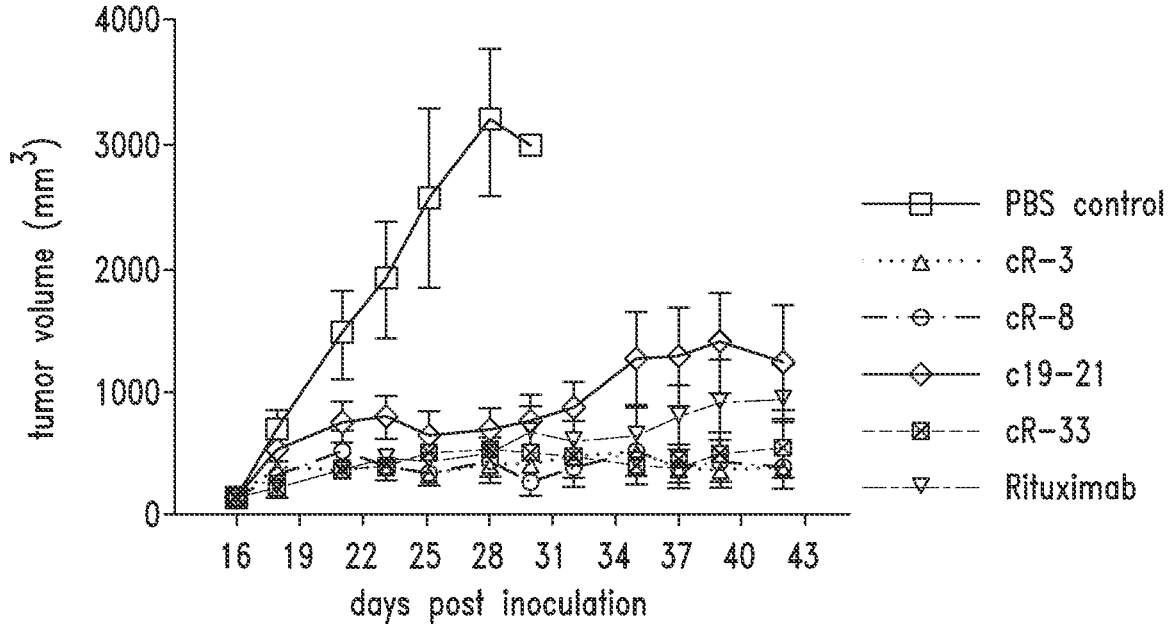

4000
3000
2000
1000
0
tumor volume (mm3)
16 19 22 25 28 31 34 37 40 43
days post inoculation
PBS control
cR-3
cR-8
c19-21
cR-33
Rituximab

FIG. 4A

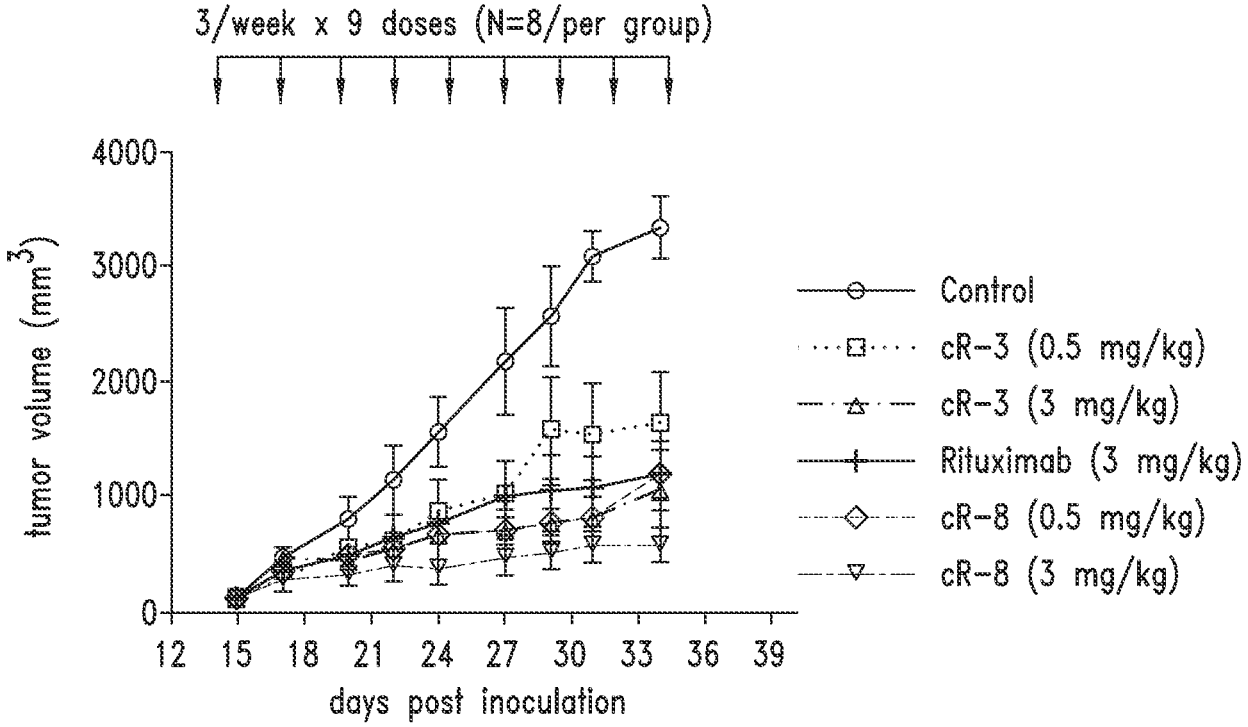

3/week x 9 doses (N=8/per group)
4000
3000
2000
1000
0
tumor volume (mm3)
12 15 18 21 24 27 30 33 36 39
days post inoculation
Control
cR-3 (0.5 mg/kg)
cR-3 (3 mg/kg)
Rituximab (3 mg/kg)
cR-8 (0.5 mg/kg)
cR-8 (3 mg/kg)

FIG. 4B

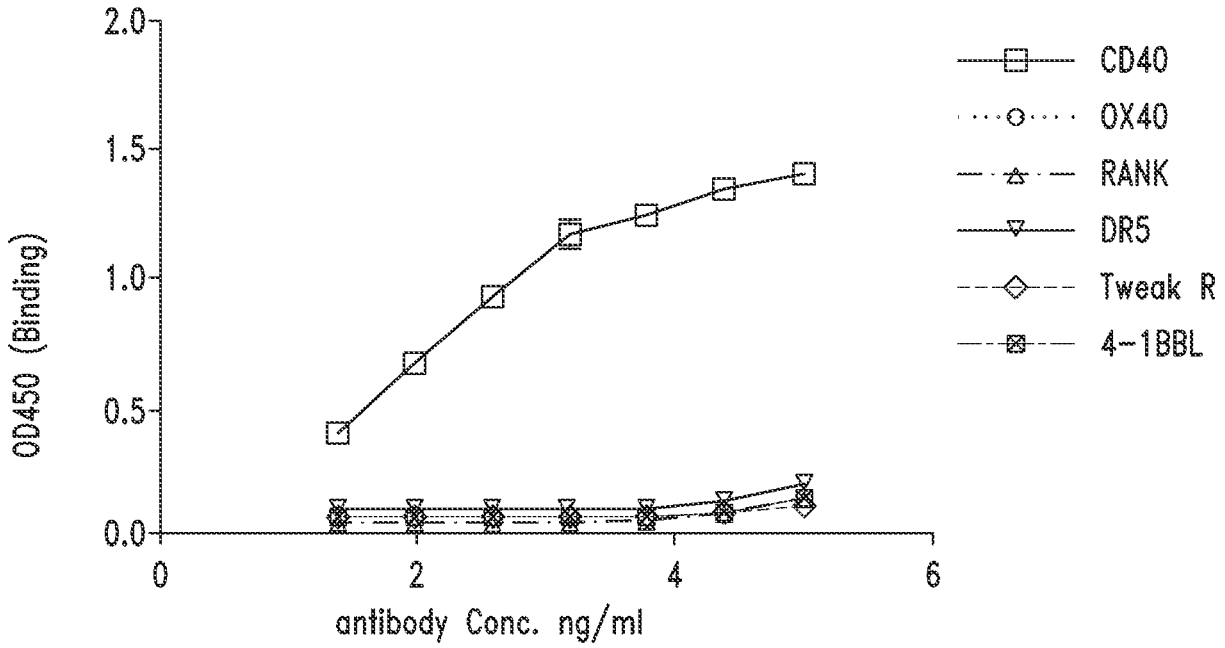

2.0
1.5
1.0
0.5
0.0
OD450 (Binding)
0
2
4
6
antibody Conc. ng/ml
CD40
OX40
RANK
DR5
Tweak R
4-1BBL

FIG. 5

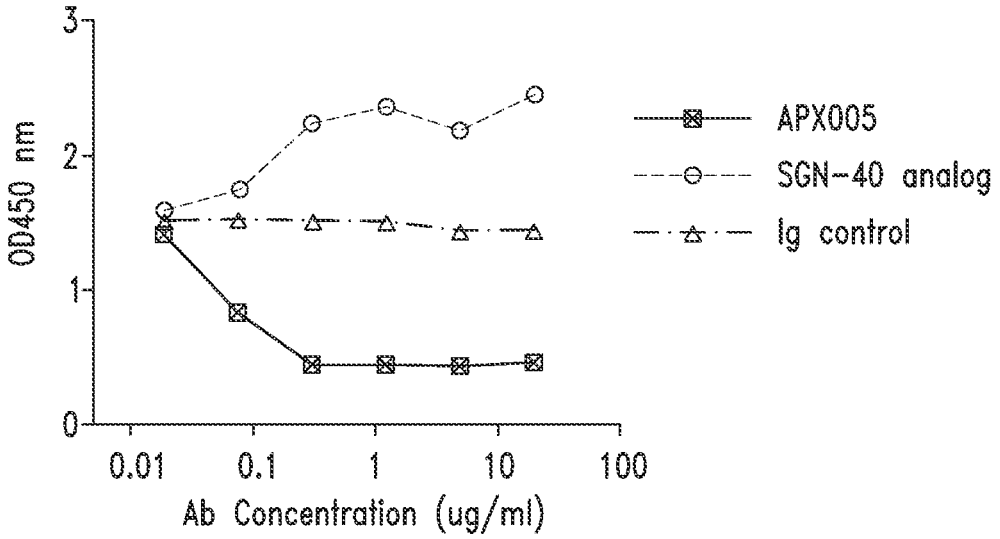

OD450 nm
3
2
1
0
0.01
0.1
1
10
100
Ab Concentration (ug/ml)
APX005
SGN-40 analog
Ig control

FIG. 6

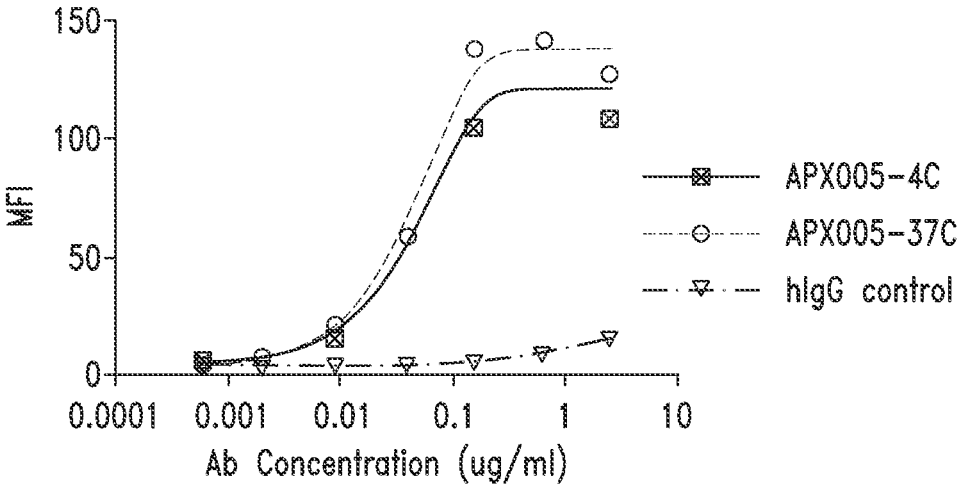

MFI
150
100
50
0
0.0001
0.001
0.01
0.1
1
10
Ab Concentration (ug/ml)
APX005-4C
APX005-37C
hIgG control

FIG. 7

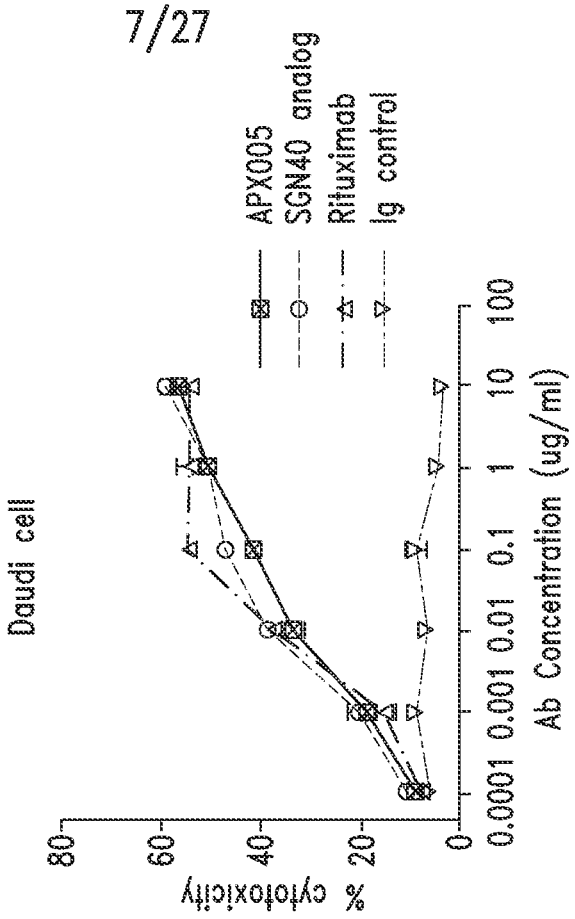

Daudi cell
% cytotoxicity
0
20
40
60
80
0.0001 0.001 0.01 0.1 1 10 100
Ab Concentration (ug/ml)
APX005
SGN40 analog
Rituximab
Ig control

FIG. 8B

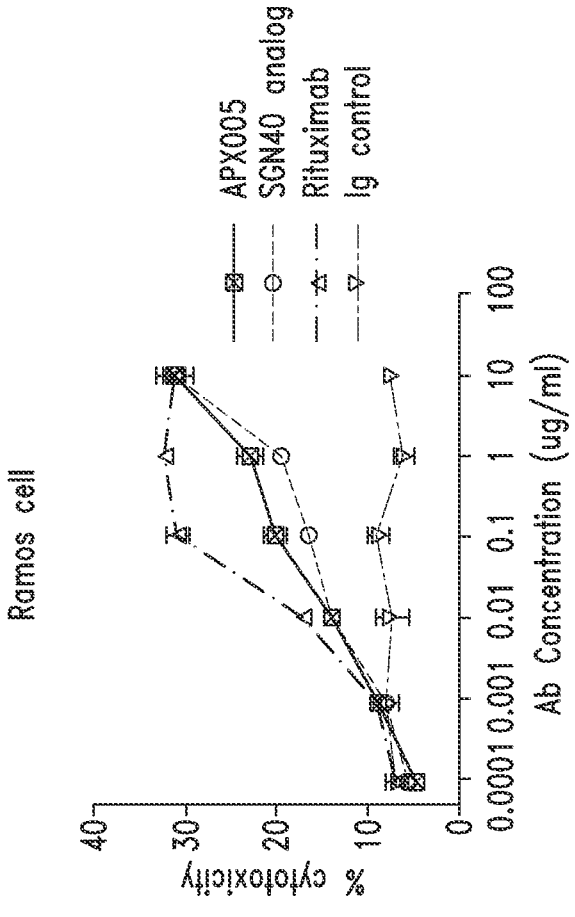

Ramos cell
% cytotoxicity
0
10
20
30
40
0.0001 0.001 0.01 0.1 1 10 100
Ab Concentration (ug/ml)
APX005
SGN40 analog
Rituximab
Ig control

FIG. 8A

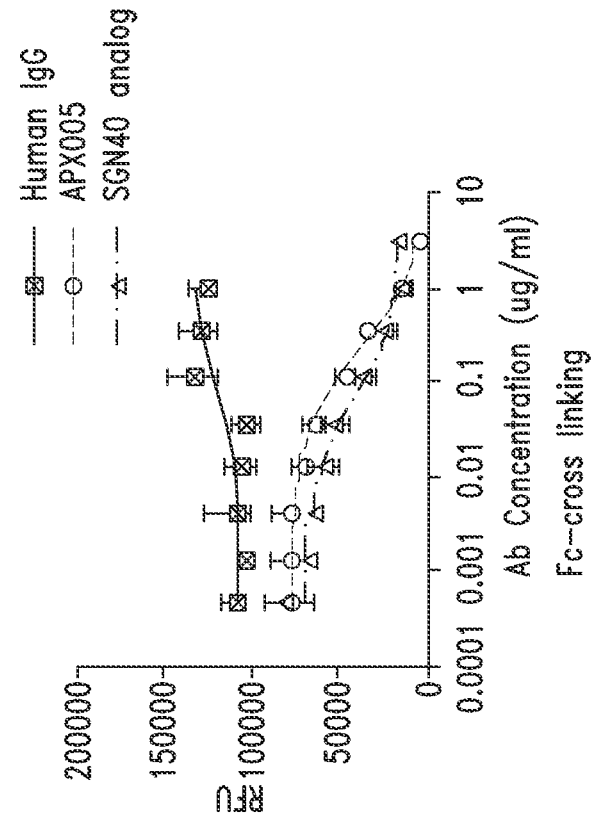

Human IgG
APX005
SGN40 analog
RFU
200000
150000
100000
50000
0
0.0001
0.001
0.01
0.1
1
10
Ab Concentration (ug/ml)
Fc-cross linking

FIG. 9B

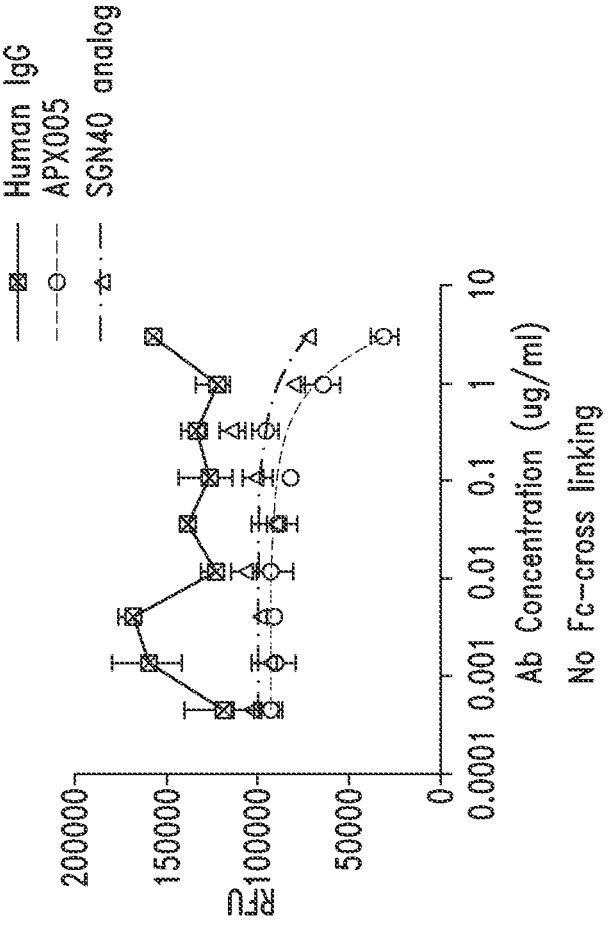

Human IgG
APX005
SGN40 analog
RFU
200000
150000
100000
50000
0
0.0001
0.001
0.01
0.1
1
10
Ab Concentration (ug/ml)
No Fc-cross linking

FIG. 9A

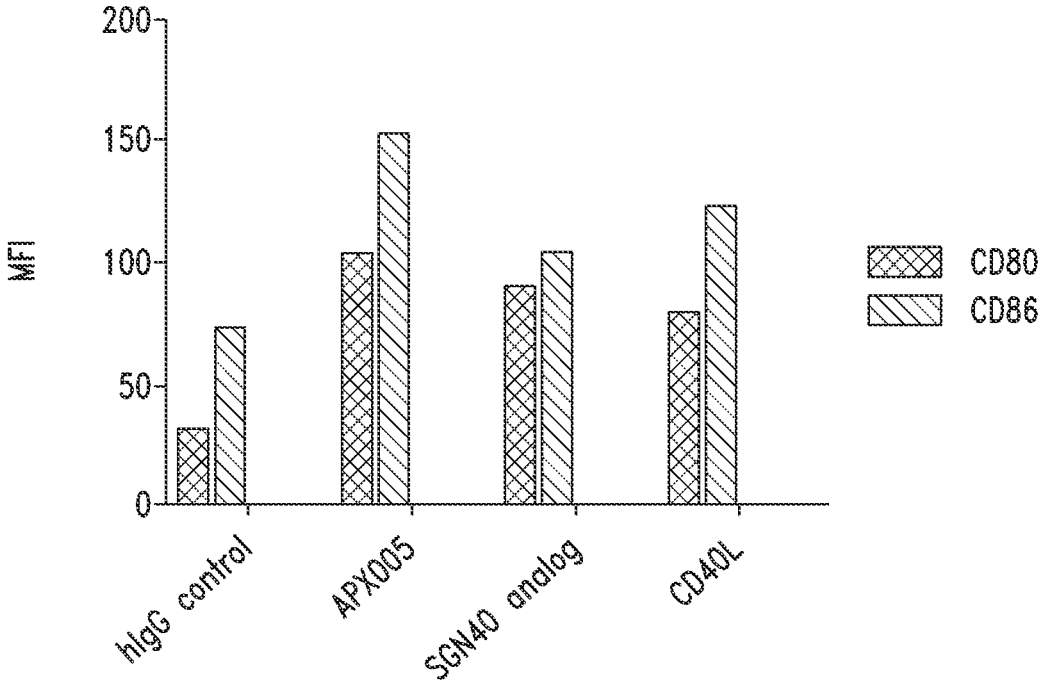

200
150
100
50
0
MFI
hIgG control
APX005
SGN40 analog
CD40L
CD80
CD86

FIG. 10

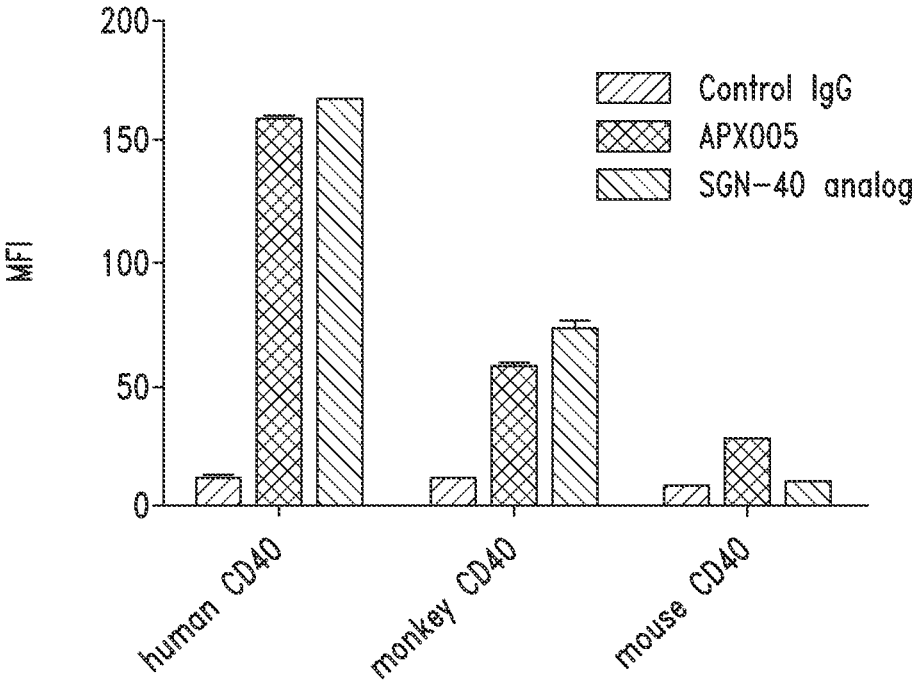


FIG. 11A

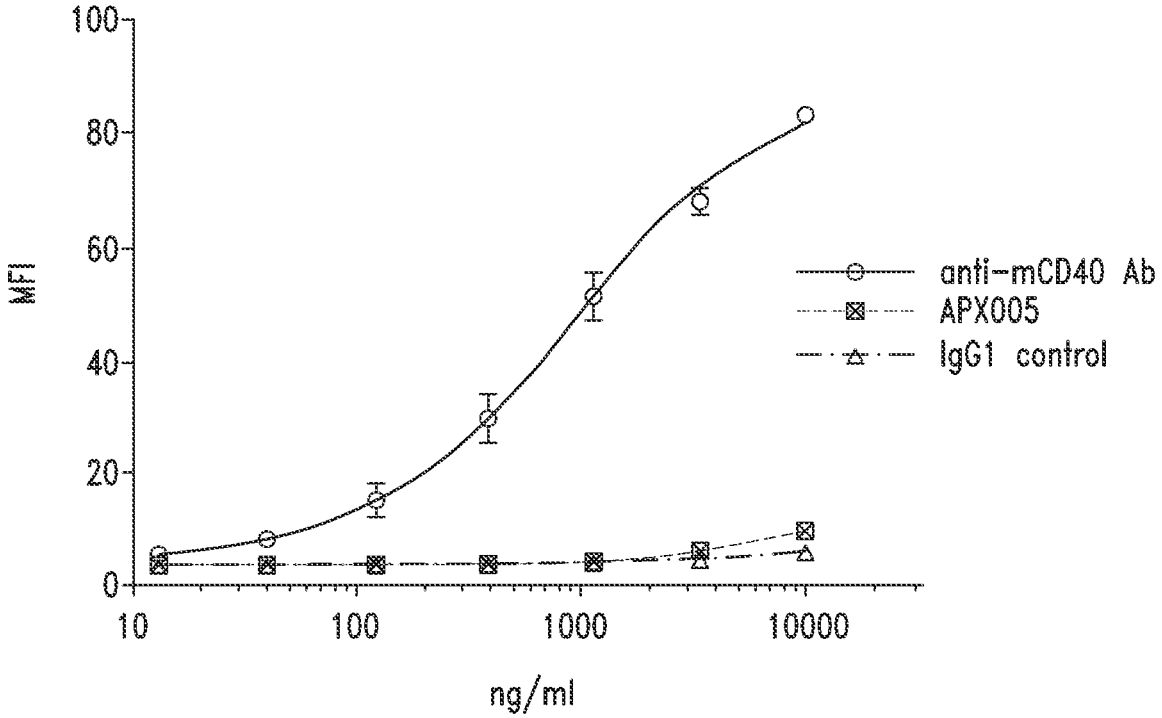


FIG. 11B

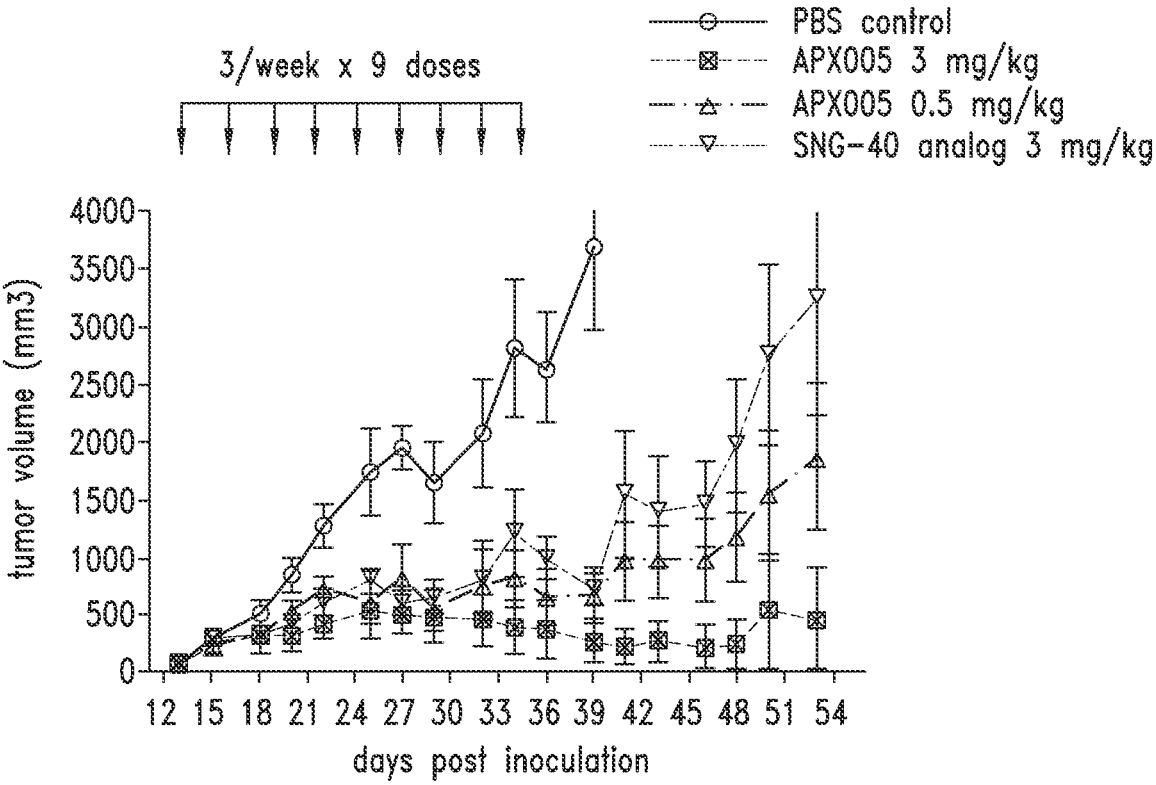


FIG. 12A

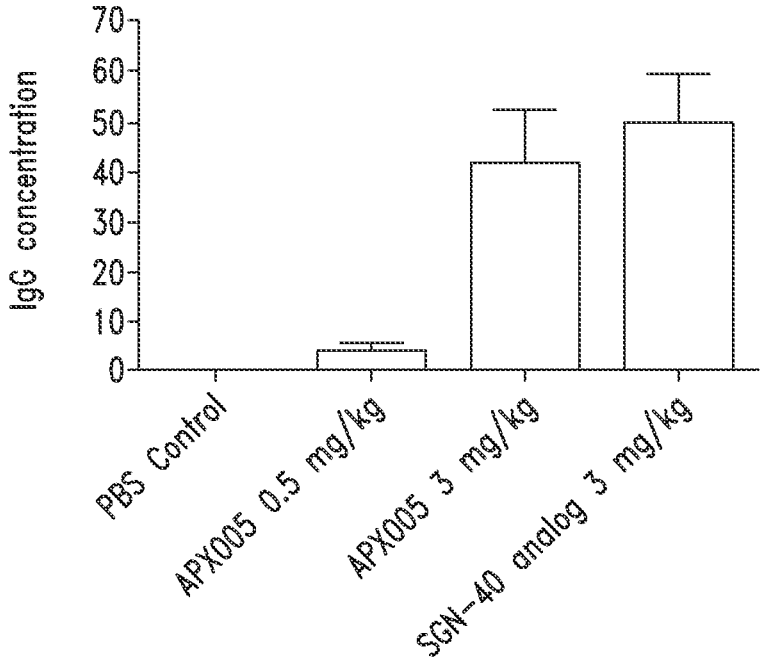


FIG. 12B

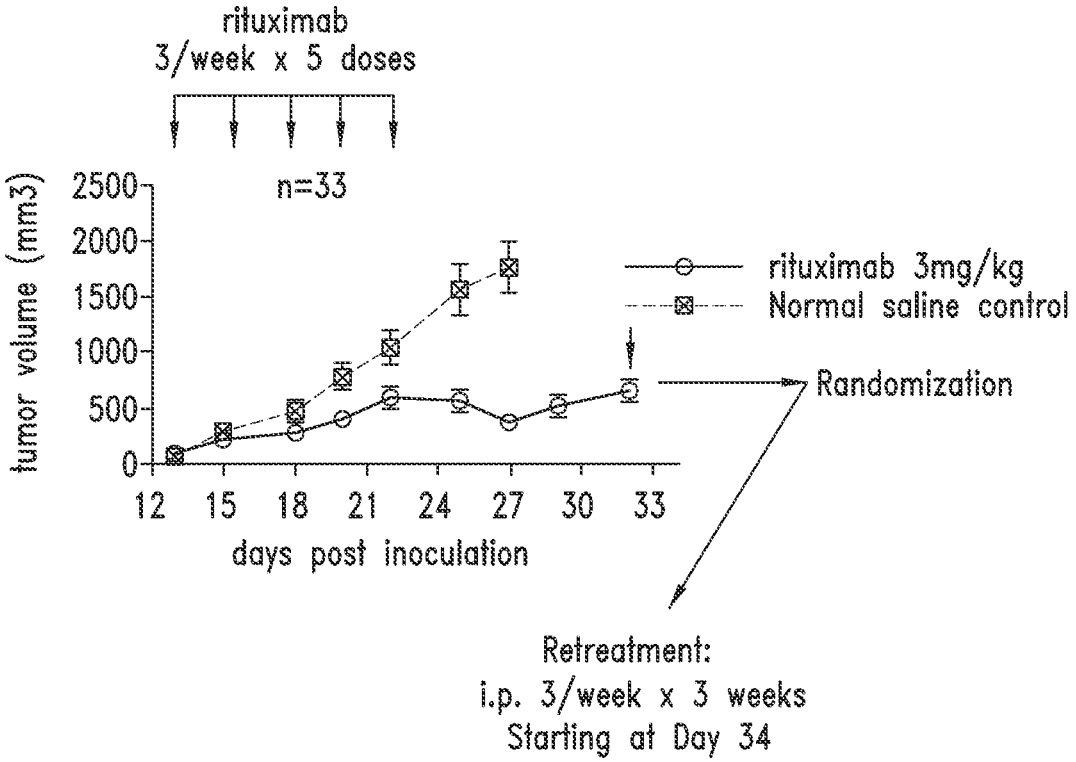


FIG. 13A

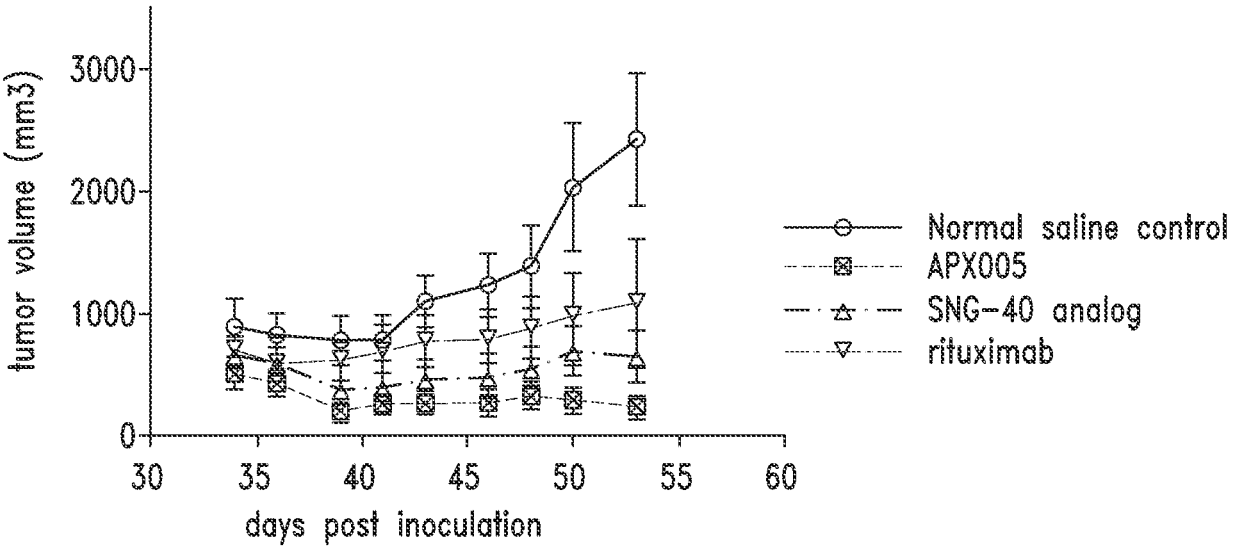


FIG. 13B

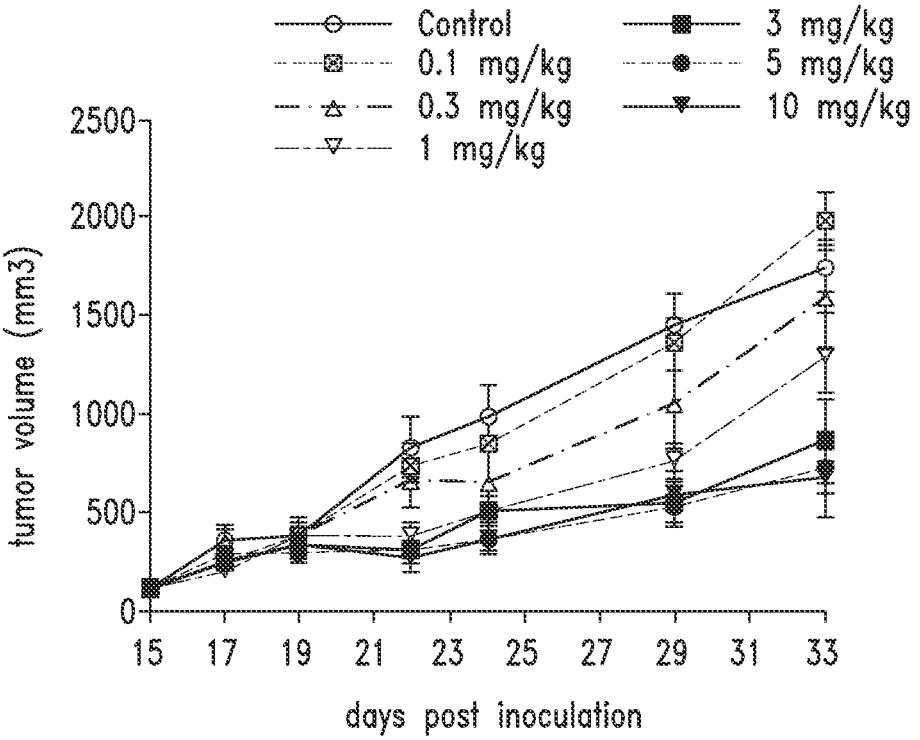

Control
0.1 mg/kg
0.3 mg/kg
1 mg/kg
3 mg/kg
5 mg/kg
10 mg/kg
tumor volume (mm3)
2500
2000
1500
1000
500
0
15
17
19
21
23
25
27
29
31
33
days post inoculation

FIG. 14

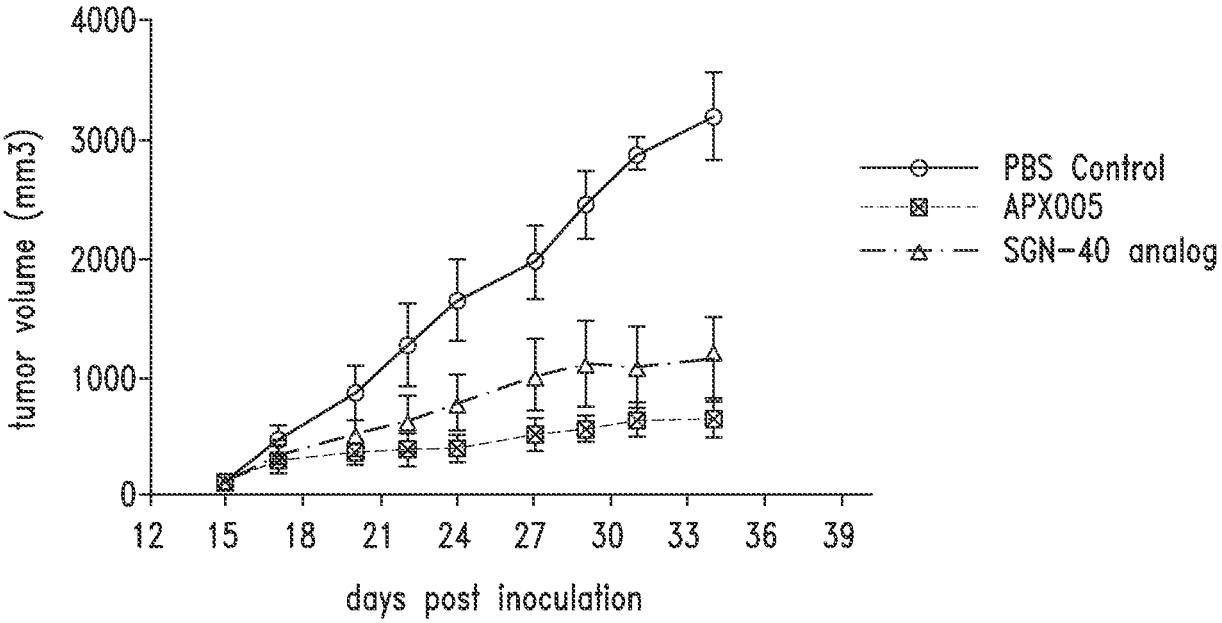

PBS Control
APX005
SGN-40 analog
tumor volume (mm3)
4000
3000
2000
1000
0
12
15
18
21
24
27
30
33
36
39
days post inoculation

FIG. 15

Anti-CD40 rabbit monoclonal antibody heavy chain

==CDR1=====

R-2 METGLRWLLLVAVLKGVQC-QQQLEESGGGLVKPEGSLTLTCKANGFSFSAN-YYMC

R-3 METGLRWLLLVAVLKGVQC--QSLEESGGDLVKPGASLTLTCTASGFSFSDS-FWIA

R-5 METGLRWLLLVAVLKGVQC-QEQLEESGGDLVKPGASLTLTCKASGFDLSST-YYMC

R-6 METGLRWLLLVAVLKGVQC-QEQLVESGGGLVQPGGSLTLTGTASGFSFSSS-YSMC

R-7 METGLRWLLLVAVLKGVQC-QEQLEESGGDLVKPEGSLTLTCTASGFSFGSG-YYMC

R-8 METGLRGLLLVAVLKGVQC---QSLEESGGDLVKPGASLTLTCTASGFSFSS--TYVC

R-9 METGLRWLLLVAVLKGVQC---QSLEESGGDLVKPGASLTLTCTASRFSFSS--TYMC

R-10 METGLRWLLLVAVLKGVQC-QEQLVESGGGLVKPGASLAVTCKASGFSFSRG-YYMC

R-12 METGLRWLLLVAVLKGVQC--QSLEESGGDLVKPGASLTLTCTASGFSFSDS-FWIA

R-16 METGLRWLLLVAVLKGVQC--QSLEESGGGLVKPGGTLTLTCKASGFSLNY--YWPC

R-18 METGLRWLLLVAVLKGVQC---QSLEESGGDLVKPGASLTLTCTASGIDFSSY-YYMC

R-20 METGLRWLLLVAVLKGVQC-QEQLEESGGDLVKPEGSLTLTCTASGFSFGSG-YYMC

R-24 METGLRWLLLVAVLKGVQC---QSLEESGGDLVKPGASLTLTCTASGFSFSRG-YYIC

R-26 METGLRWLLLVAVLKGVQC-QEQLVESGGDLVQPEGSLTLTSTASGFSLSSS-YFMC

R-30 METGLRWLLLVAVLKGVQC--QSLEESGGDLVKPGASLTLTCTASGFSFSDS-FWIA

R-33 METGLRWLLLVAVLKGVQC--QSLEESGGDLVKPGASLTLTCTASGFSFSSS-YWIC

FIG. 16A

Anti-CD40 rabbit monoclonal antibody heavy chain

==========CDR2======

R-2 WVRQAPGKGLELIACIYA--SSGSTWYASWAKGRFTISKSTSLNTVTLQMTSLTVAD

R-3 WVRQAPGKGLEWIGCIHAL-SSGSTYYANWARGRFTISKTSST-TVTLQMNSLTAAD

R-5 WVRQAPGKGLEWIGCIY---ATGGTYYASWAKGRFTISKTSPT-TVTLQMPSLTAAD

R-6 WVRQAPGKGLEWIGCIDT--GRGYTYHASGAKGRFTFSKTSST-TVTLQMTSLTAAD

R-7 WVRQAPGKGLEWIGCIYV--GHDSLYYAGWARGRFTISKTSST-TVTLQMTSLTAAD

R-8 WVRQAPGKGLEWIACIYT--GDGTNYSASWAKGRFTISKPSST-TVTLQMTSLTPAD

R-9 WVRQAPGKGLEWIACTYTG-SSGGTYYASWAKGRFTISQTSST-TVTLQLTGLTPAD

R-10 WVRQAPGKGLEWIACIGA--GSGNTYYATWTKGRATISKTSWT-TVSLEMTSLTGAD

R-12 WVRQAPGKGLEWIGCIHAL-SSGSTYYANWARGRFTISKTSST-TVTLQMNSLTAAD

R-16 WVRQAPGKGLEWVACLNGG-DSDTTVYARWAKGRFTISKASST-TVTLQMTSLTAAD

R-18 WVRQAPGKGLEWIGCIYA--GSGSTYYASWAKGRFTISKTSST-TVTLQMTSLTAAD

R-20 WVRQAPGKGLEWIGCIYV--GHDSLYYAGWARGRFTISKTSST-TVTLQMTSLTAAD

R-24 WVRQAPGKGLEWIACIGA--GSGGTYFASWAKGRFSISRTSST-TVTLQMTSLTAAD

R-26 WVRQAPGKGLEWIACISAG-SSGHTYYASWAKGRFTVSKTSST-TVTLQMTSLTAAD

R-30 WVRQAPGKGLEWIGCIHAL-SSGSTYYANWARGRFTISKTSST-TVTLQMNSLTAAD

R-33 WVRQAPGKGLEWIACINTG-SSVTTVYARWAKGRFTISKASST-TVTLQMTSLTAAD

FIG. 16B

Anti-CD40 rabbit monoclonal antibody heavy chain

=========CDR3=========

R-2	TATYFCARSGGYAAY----------DLWGPGTLVTVSS
R-3	TATYFCARSYAGYADYNVATGL---NLWGPGTLVTVSS
R-5	TATYFCARDIVGDNIYYF--------NFWGPGTLVTVSS
R-6	TATYFCARSSYVRYDNRNYGF-----NLWGPGTLVTVSS
R-7	TATYFCARGASITNSYF---------SLWGPGTLVTVSS
R-8	TATYFCARPDITYGFAI---------NFWGPGTLVTVSS
R-9	TATYFCARPDVGFDFAI---------NFWGPGTLVTVSS
R-10	TATYFCAREDPGNDDYGYAD-----NLWGPGTLVTVSS
R-12	TATYFCARSYAGYADYNVATGL---NLWGPGTLVTVSS
R-16	TATYFCARYIIPGYHF----------NLWGPGTLVTVSS
R-18	TATYFCARSGYNDGSYY---------NLWGPGTLVTVSS
R-20	TATYFCARGASITNSYF---------SLWGPGTLVTVSS
R-24	TATYFCAREDAGNDDYGYAR-----NLWGPGTLVTVSS
R-26	TATYFCARASADVGDY----------SLWGPGTLVTVSS
R-30	TATYFCARSYAGYADYNVATGL---NLWGPGTLVTVSS
R-33	TATYFCARYIIPGYNF----------NLWGPGTLVTVSS

FIG. 16C

Anti-CD40 rabbit monoclonal antibody heavy chain

==CDR1====

R-35 METGLRWLLLVAVLKGVQC--QSLEESGGDLVKPGASLTLTCTASGFSFSGT-YWIC

R-36 METGLRWLLLVAVLKGVQC-QQQLVESGGGLVKPGASLTLTCKASGFSFSST-YWIC

19-21 METGLRWLLLVAVLKGVQC--QSLEESGGRLVTPGTPLTLTCTVSGFDLSS--NAMN

19-35 METGLRWLLLVAVLKGVQC--QSLEESGGRLITPGTPLTLTCTVSGFSLSS--YAVN

19-41 METGLRWLLLVAVLKGVQC--QSLEESGGRLVTPGTPLTLTCTVSGFSLST--YDMT

19-45 METGLRWLLLVAVLKGVQC--QSVEESGGRLVTPGTPLTLNCTVSGFSLSS--YDMN

19-57 METGLRWLLLVAVLKGVQS--QSVEESGGRLITPGTPLTLTCTISGFSLSS--YAVD

19-59 METGLRWLLLVAVLKGVQC--QSVEESGGRLVTPGTPLTLTCTVSGFSLS--DYVMR

FIG. 16D

Anti-CD40 rabbit monoclonal antibody heavy chain

========CDR2=====

R-35 WVRQAPGKGLEWIACIYAG-ASGNSYYANWAQGRFIISKRSST-AVTLQMTSLTAAD

R-36 WVRQAPGKGLEWIGCINSD-DSGTNVYANWAKGRFTISKASST-TVTLQMTSLTAAD

19-21 WVRQAPGKGLEWIGYITIS---GSAGYASWAKGRFTISKTSTT--VDLKISSPTTED

19-35 WVRQAPGKGLEYIGLIATG---GGTFYTNWARGRLTISKTSTT--VDLKMPSPQTED

19-41 WVRQAPGKGLEWLGLINTI---GSAYYASWASGRFTISKTSTS--VTLKMTSPTTED

19-45 WVRQAPGKGLEWIGVIWNN---GEIFYASWAKGRFTISKTSTT--VDLKITSPSTED

19-57 WVRQAPGKGLEYIGIIATG---GGTYYTNWAKGRFTISKTSTT--VDLKMTSPQPED

19-59 WVRQAPGKGLEWIGVISSA---GNTYYATWAKDRFTISKTSTT--VDLRIASPTTED

FIG. 16E

Anti-CD40 rabbit monoclonal antibody heavy chain

=======CDR3=======

R-35	TATYFCARSYTGYADYNVATGL---NLWGPGTLVTVSS
R-36	TATYFCARYPIPGYHF----------NLWGPGTLVTVSS
19-21	TATYFCARGYNTMA------------IWGPGTLVTVSS
19-35	TATYFCVRGYPGSSDF---------NIWGPGTLVTVSS
19-41	TATYFCVRGVPGYSSSF--------NIWGPGTLVTVSS
19-45	TATYFCAGDADGGVVSYF-------HVWGPGTLVTVSS
19-57	TATYFCVRGYPGSSDF---------NIWGPGTLVTVSS
19-59	TATYFCARIWRPDDPTNS-------DIWGPGTLVTVSS

FIG. 16F

Anti-CD40 rabbit monoclonal antibody light chain

R-2 MDTRAPTQLLGLLLLWLPGATF-AAVLTQTPSPVSAAVGGTVSISC

R-3 MDTRAPTQLLGLLLLWLPGARC-DVVMTQTPSSASAAVGGTVTTKC

R-5 MDTRAPTQLLGLLLLWLPGARC-ALVMTQTPSSVSAAVGGTVTINC

R-6 MDTRAPTQLLGLLLLWLPGARCADIVMTQTPASVEAAVGGTITINC

R-7 MDTRAPTQLLGLLLLWLPGVTF-AIEMTQTPFSVSEPVGGTVTIKC

R-8 MDTRAPTQLLGLLLLWLPGARSADIVMTQTPSSASEPVGGTVTIKC

R-9 MDTRAPTQLLGLLLLWLPGARCADIVMTQTPSSASEPVGGTVTIKC

R-10 MDTRAPTQLLGLLLLWLPGARCADIVMTQTPSSVSAAVGGTVTIKC

R-12 MDTRAPTQLLGLLLLWLPGARC-DVVMTQTPSSASAAVGGTVTIKC

R-16 MDTRAPTQLLGLLLLWLPGARC-AYDMTQTPASVSAAVGDTVTIKC

R-18 MDTRAPPQLLGLLLLWLPGARCADIVMTQTPSSVEAAVGGTVTIKC

R-20 MDTRAPTQLLGLLLLWLPGVTF-AIEMTQTPFSVSEPVGGTVTIKC

R-24 MDTRAPTQLLGLLLLWLPGARCADIVMTQTPASVSAAVGGTVTINC

R-26 MDTRAPTQLLGLLLLWLPGARC-DVMMTQTPASVSAPVGGTVTIKC

R-30 MDTRAPTQLLGLLLLWLPGARC-DVVMTQTPSSASAAVGGTVTIKC

R-33 MDTRAPTQLLGLLLLWLPGARC-AYDMTQTPASVEVAVGGTVTINC

FIG. 16G

Anti-CD40 rabbit monoclonal antibody light chain

```
        ======CDR1==========                    ===CDR2=

R-2     QSSKSVYNN-----NWLSWYQQKPGQPPKLLIYRASTLASGVPSRFRGSGSGTEFTLT
R-3     QASQSIG-------SYLAWYQQKPGQRPKLLIYAASNLASGVPSRFKGSRSGTEYTLT
R-5     QASQTIS-------NELSWYQQKPGQPPKLLIYLASTLASGVPSRFKGSGSGTQFTLT
R-6     QASESIS-------SWLSWYQQKPGQRPKLLIYYTSNLASGVPSRFKGSGAGTDFTLT
R-7     QASEDIF-------SNLGWYQQKPGQPPKLLIYAASNLESGVPSRFKGSGSGTDFTLT
R-8     QASQSIS-------SRLAWYQQKPGQPPKLLIYRASTLASGVPSRFKGSGSGTEFTLT
R-9     QASQSIS-------SRLAWYQQKPGQPPKLLIYRASTLASGVSSRFKGSGSGTQFTLT
R-10    QASETIY-------TLLAWYQQKPGQPPKLLIYRASTLESGVPSRFQGSGSGTEFTLT
R-12    QASQSIG-------SYLAWYQQKPGQRPKLLIYAASNLASGVPSRFKGSRSGTEYTLT
R-16    QASQSIS-------SYLYWYQQKPGQPPKLLIYQASKLASGVPSRFKGSGSGTEYTLT
R-18    QASQSIY-------TWLAWYQQKPGQPPKLLIYKASTLASGVPSRFKGSGSGTDYTLT
R-20    QASEDIF-------SNLGWYQQKPGQPPKLLIYAASNLESGVPSRFKGSGSGTDFTLT
R-24    QASESAY-------TLLAWYQQKPGQPPKLLIYGASILESGVPSRFKGSGSGTDFTLT
R-26    QASQSIS-------TYLAWYQQKPGQPPKLLIYYASTLASGVSSRFEGSRSVTEYTLT
R-30    QASQSIG-------SYLAWYQQKPGQRPKLLIYAASNLASGVPSRFKGSRSGTEYTLT
R-33    QASQSIS-------SYLYWYQQKPGQPPKLLIYDASKLASGVPSRFKGSGSGTQFTLT
```

FIG. 16H

Anti-CD40 rabbit monoclonal antibody light chain

=======CDR3=======

R-2 ISDVVCDDAATYYCAGYESVNTDG---HAFGGGTEVVVK

R-3 ISGVQREDAATYYCLGSFTGSD-----TTFGGGTELEIL

R-5 ISDLECADAATYYCQQGYTYSSVD---NVFGGGTEVVVK

R-6 ISDLECADAATYYCQSNYGSSSSTY--YGFGGGTEVVVK

R-7 INDLECDDAATYYCQSAYYSSSY----LAFGGGTEVVVK

R-8 ISDLECADAATYYCQCTGYGIS-----WPIGGGTEVVVK

R-9 ISDLECADAATYYCQCTGYTIS-----WPFGGGTEVVVK

R-10 ISDLECADAATYYCQSHYFDSSSGYG-NTFGGGTEVVVK

R-12 ISGVQREDAATYYCLGSFTGSD-----TTFGGGTELEIL

R-16 ISDLECADVATYYCQQGYSHINVD---NIFGGGFQVVVK

R-18 ISDLECDDAATYYCQRYSWNGSYG---VSFGGGTEVVVR

R-20 INDLECDDAATYYCQSAYYSSSY----LAFGGGTEVVVK

R-24 ISDLECADAATYYCQSHYFGSSSGYA-NTFGGGTEVVVK

R-26 ISDLECADAATYYCQSTYYGNG-----HPFGGGTEVVVK

R-30 ISGVQREDAATYYCLGSFTGSD-----TTFGGGTELEIL

R-33 ITGVECADAATYYCQQGYSHINVD---NIFGGGTEVVVK

FIG. 16I

Anti-CD40 rabbit monoclonal antibody light chain

```
R-35   MDTRAPTQLLGLLLLWLPGARC-ALVMTQTPSSTSAAVGGTVTIKC

R-36   MDTRAPTQLLGLLLLWLPGARC-AYDMTQTPASVEVAVGGTVTIKC

19-21  MDTRAPTQLLGLLLLWLPGATF-AQVLTQTPSPVSAPVGGTVTINC

19-35                ALAPGARC-AVVLTQTPASVSAAVGGTVSISC

19-41  MDTRAPTQLLGLLLLWLPGATF-AIVMTQTPSSKSVAVGDTVTINC

19-45  MDTRAPTQLLGLLLLWLPGARC-AYDMTQTPASVEVAVGGTVTIKC

19-57  MDTRAPTQLLGLLLLWLPGARC-AVVLTQTPASVSAAVGGTVSISC

19-59  MDTRAPTQLLGLLLLWLPGARC-DVVMTQTPSSTSAAVGGTVTIKC
```

FIG. 16J

Anti-CD40 rabbit monoclonal antibody light chain

```
                ====CDR1========                    ==CDR2=

R-35    QASQSIG-------SYLAWYQQKPGQRPKLLIYAASNLASGDPSRFSASRSGTEY

R-36    QASQNIY-------GYLFWYQQKPGQPPNLLIAEASKLPSGVPSRFKGSGSGTEY

19-21   QSSQNVLIN----NRLAWYQQKPGQPPKLLIYDASKLASGVPSRFKGSGSGTQF

19-35   QSSKSVYNK----HHLAWLQQKPGQPPKLLIYYASTLASGVPSRFRGSGSGTQF

19-41   QASESVDSN----KRLAWYQQKPGQPPKLLIYTASTLASGVPSRFKGSGSGTEF

19-45   QASQTIY------TYLAWYLQKPGQPPKLLIYEASKLASGVSSRFEGSGSGTQF

19-57   QSSKSVYNK----NHLAWLQQKPGQPPKLLIYYTSTPASGVPSRFRGSGSGTQL

19-59   QASESIS------SSLAWYQQKPGQPPKLLIYYASDLASGVPSRFSGSRSGTEY
```

FIG. 16K

Anti-CD40 rabbit monoclonal antibody light chain

=====CDR3=======

R-35 TLTISGVQREDAATYYCLGSFTGSD-----TTFGGGTELEIL

R-36 SLTISGVECADAATYYCQQSYSHINVD---NIFGGGTEVVVK

19-21 TLTISGVQCDDAATYYCQAGYSSGDG----NAFGGGTEVVVK

19-35 TLTISDVQCDDAATYYCAGGYPSDSD----NTFGGGTEVVVE

19-41 TLTISDVVCDDAATYYCAGYKATTTDA---SAFGGGTEVVVK

19-45 TLTISGVQCDDAATYYCQQGYNSRHVD---NVFGGGTEVVVK

19-57 TLTISDVQCDDAATYYCAGGYNSDSD----NTFGGGTEVVVE

19-59 TLTISGVQREDAATYYCLGGYATAAYR---TAFGGGTELEILC

FIG. 16L

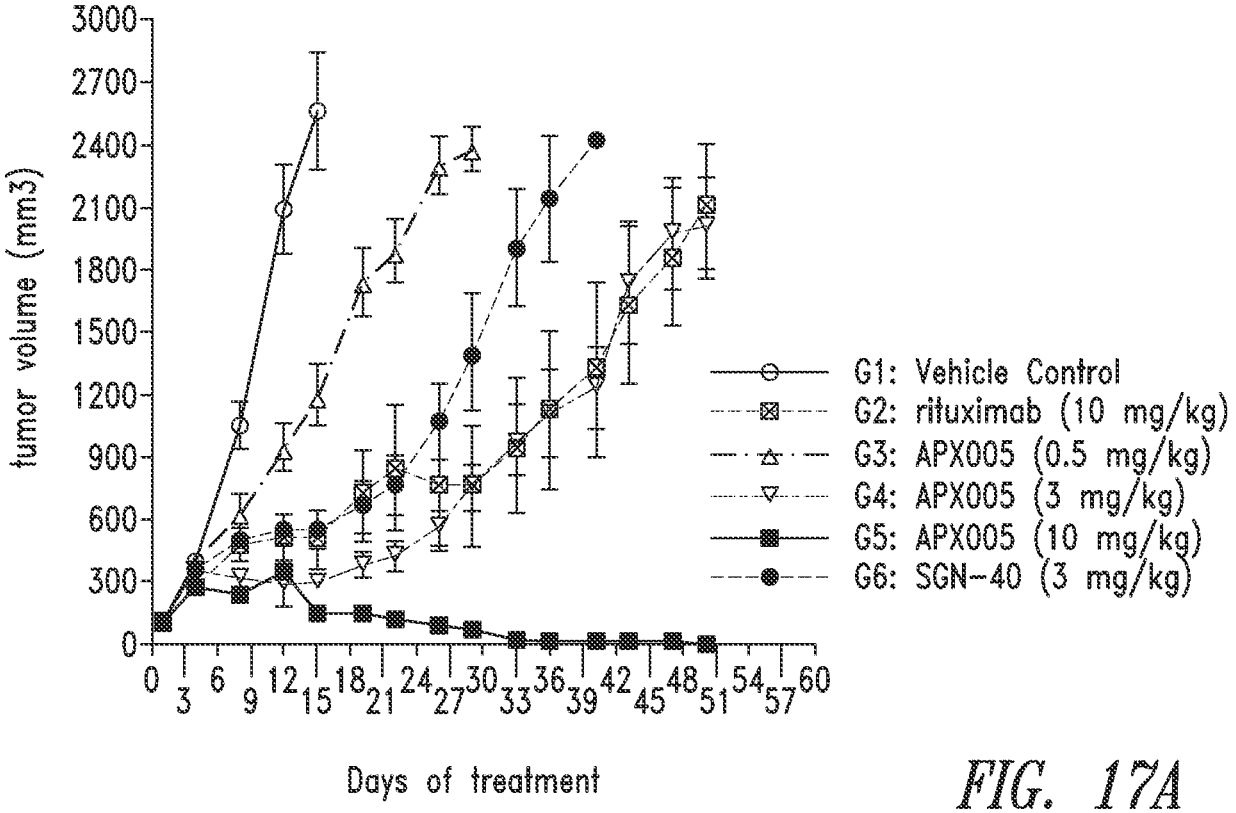


FIG. 17A

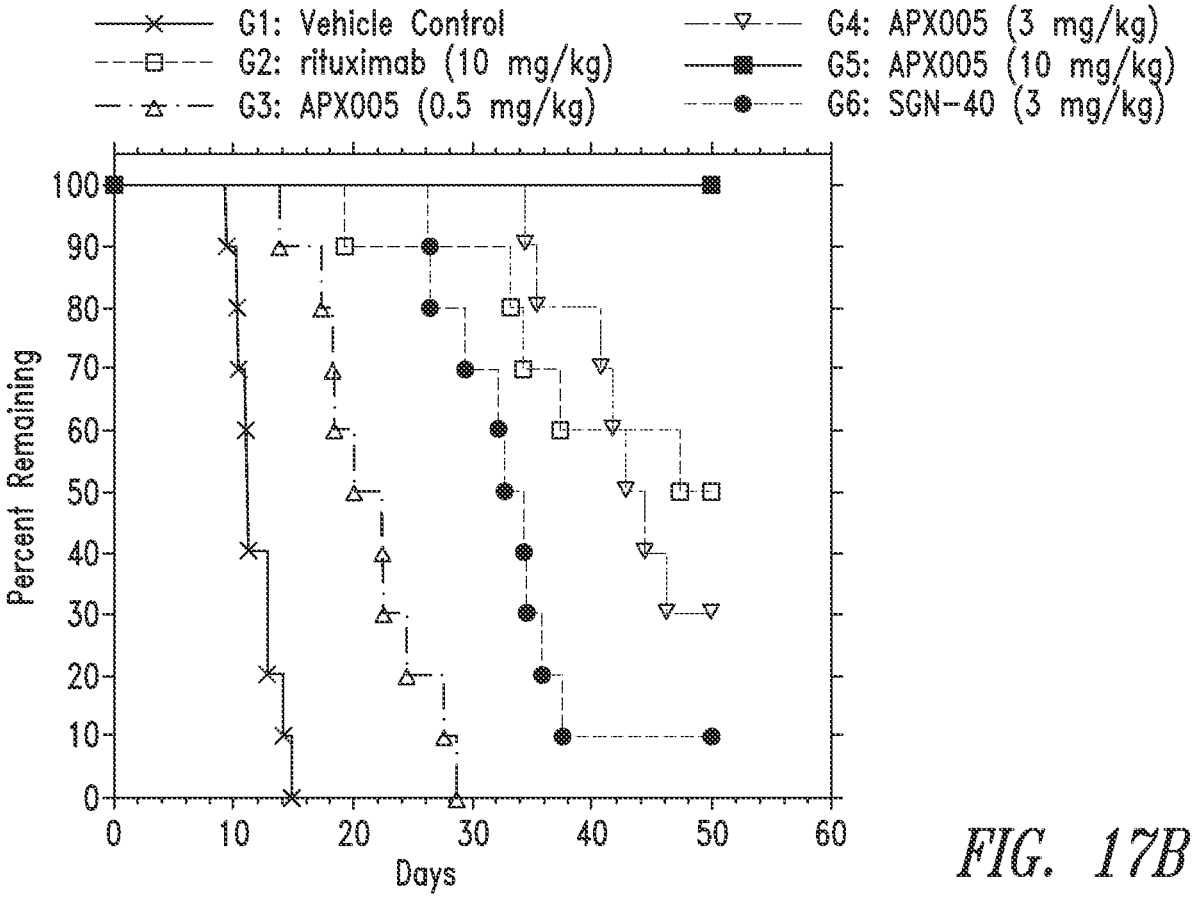


FIG. 17B

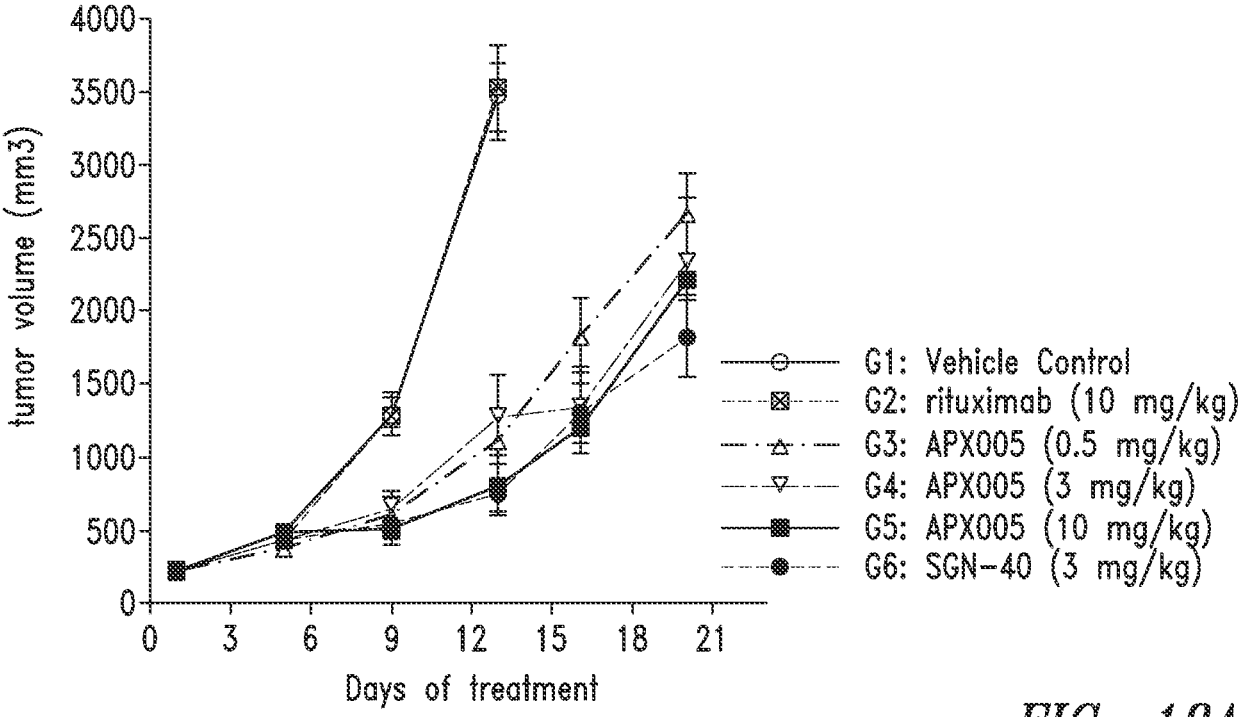


FIG. 18A

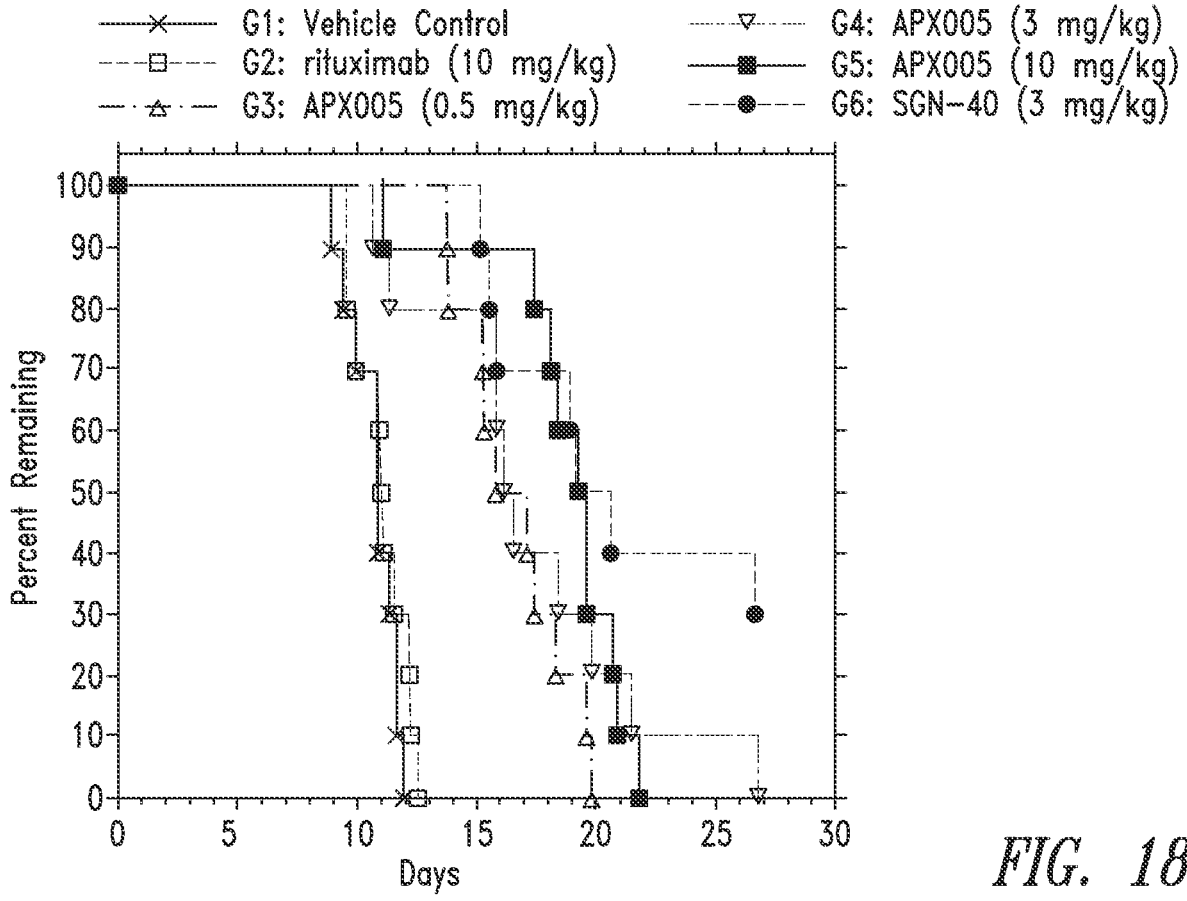


FIG. 18B