FIG. 1

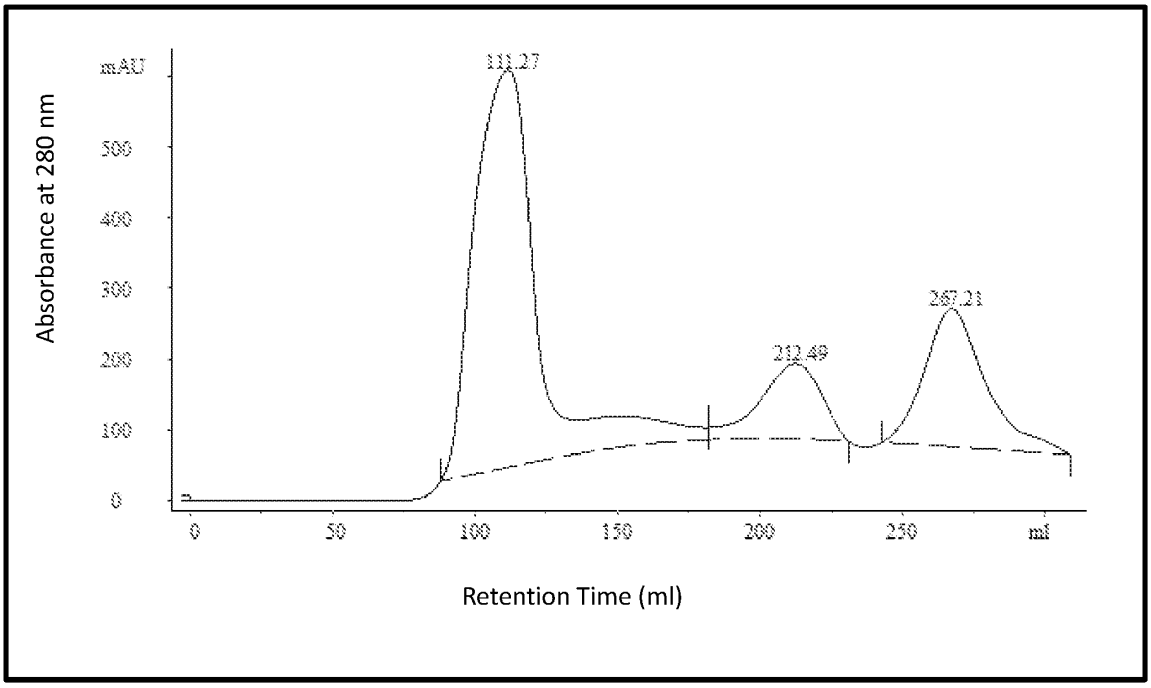

Absorbance at 280 nm
mAU
500
400
300
200
100
0
111.27
212.49
267.21
0
50
100
150
200
250
ml
Retention Time (ml)

FIG. 2

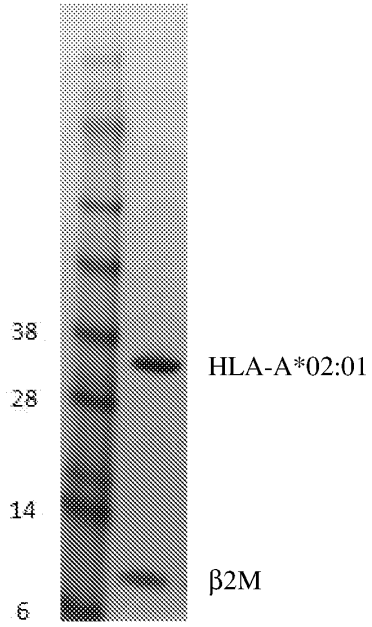


FIG. 3

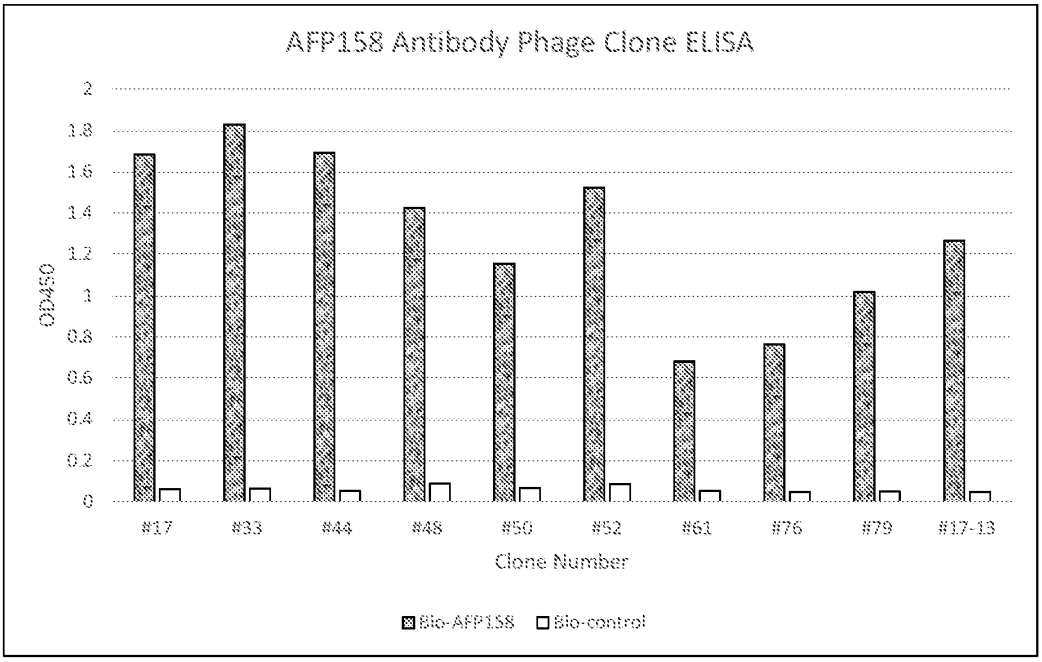

AFP158 Antibody Phage Clone ELISA
OD450
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
#17
#33
#44
#48
#50
#52
#61
#76
#79
#17-13
Clone Number
Bio-AFP158
Bio-control

FIG. 4

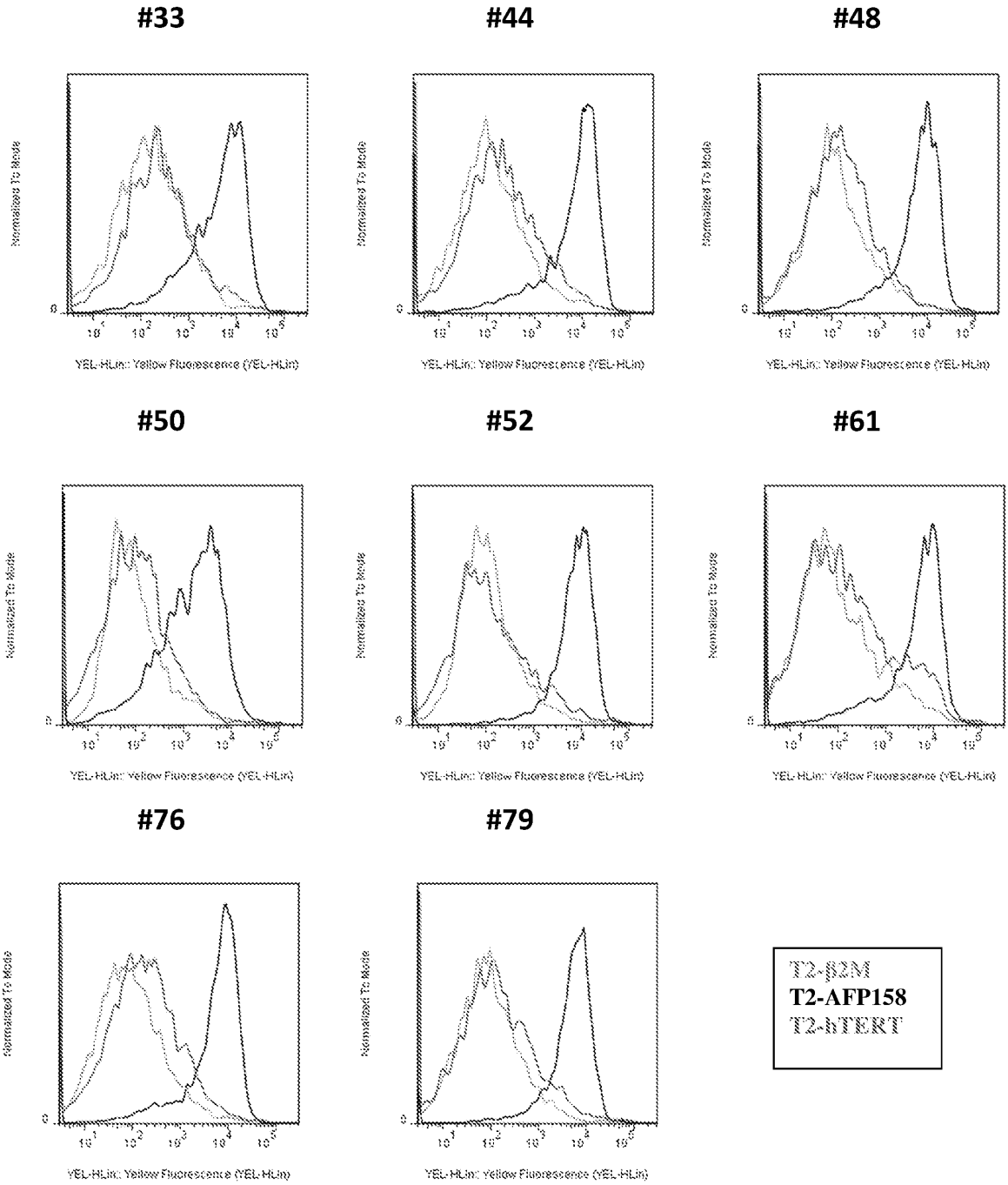

#33
#44
#48
#50
#52
#61
#76
#79
Normalized To Mode
YEL-HLin:: Yellow Fluorescence (YEL-HLin)
T2-β2M
T2-AFP158
T2-hTERT

FIG. 5

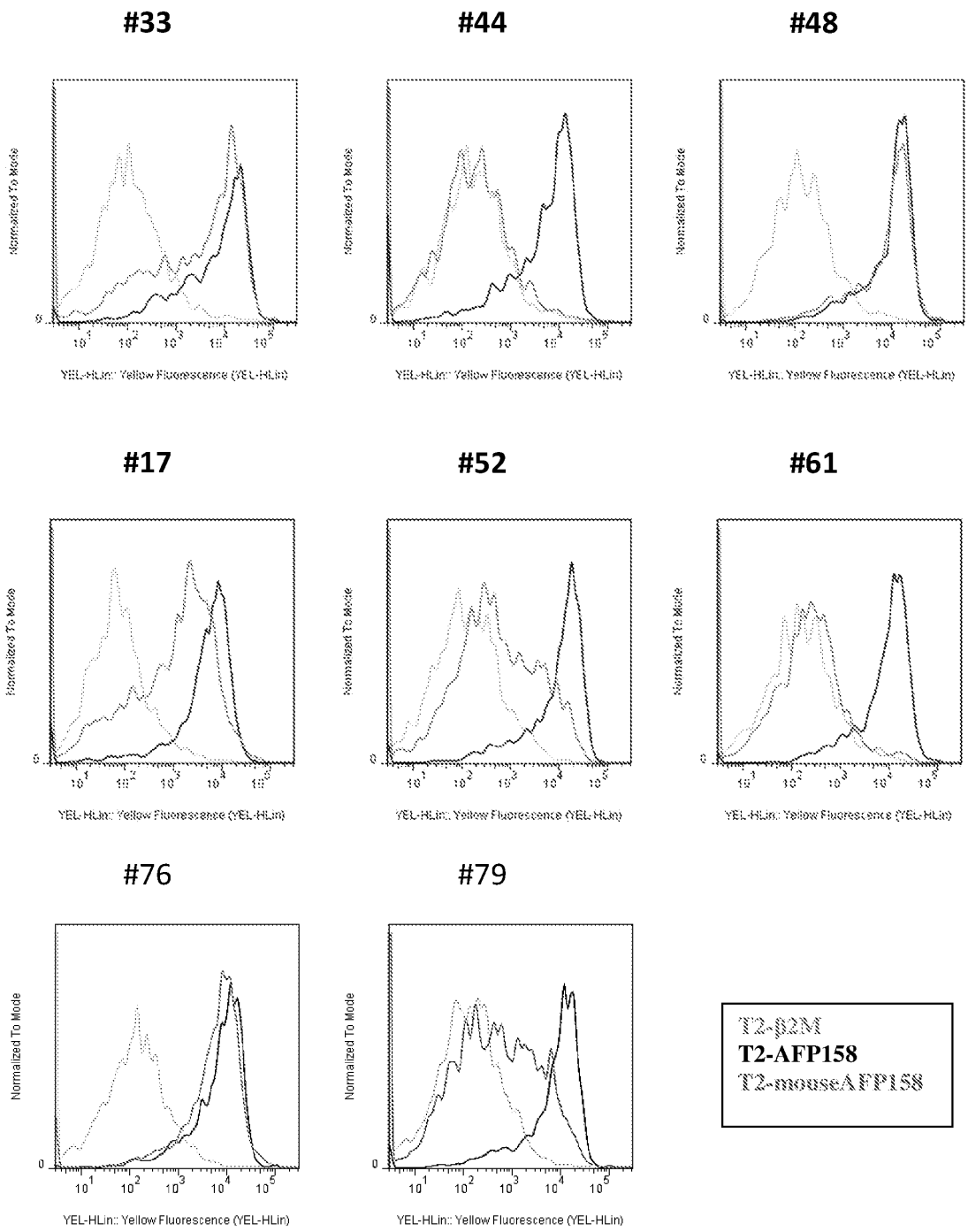
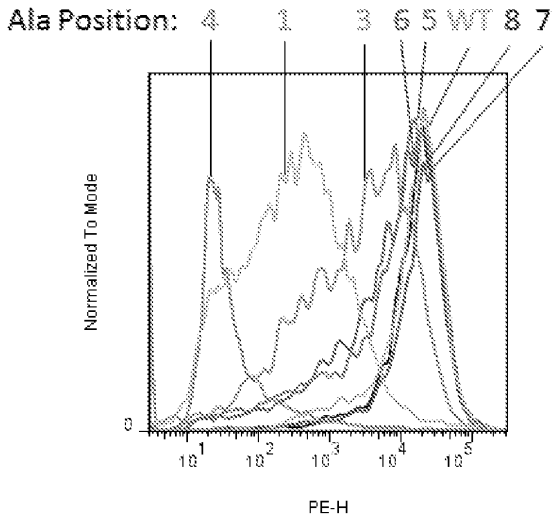

#33
#44
#48
#17
#52
#61
#76
#79
Normalized To Mode
YEL-HLin:: Yellow Fluorescence (YEL-HLin)
T2-β2M
T2-AFP158
T2-mouseAFP158

FIG. 6



Peptide	Ala Position	FACS MFI
FMNKFIYEI	WT	37900
AMNKFIYEI	1	458
FMAKFIYEI	3	4470
FMNAFIYEI	4	20.9
FMNKAIYEI	5	21800
FMNKFAYEI	6	18800
FMNKFIAEI	7	42500
FMNKFIYAI	8	38500

FIG. 7

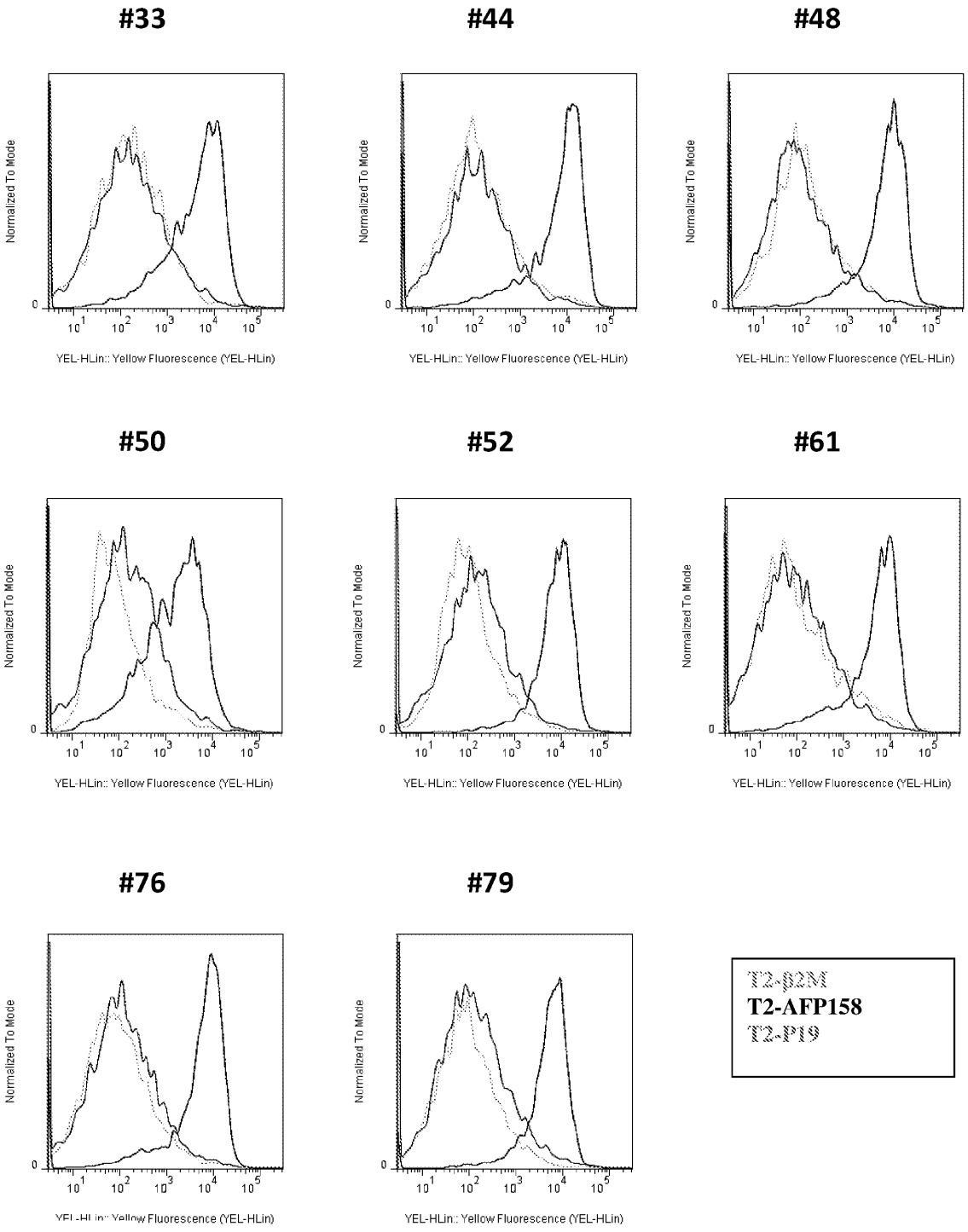
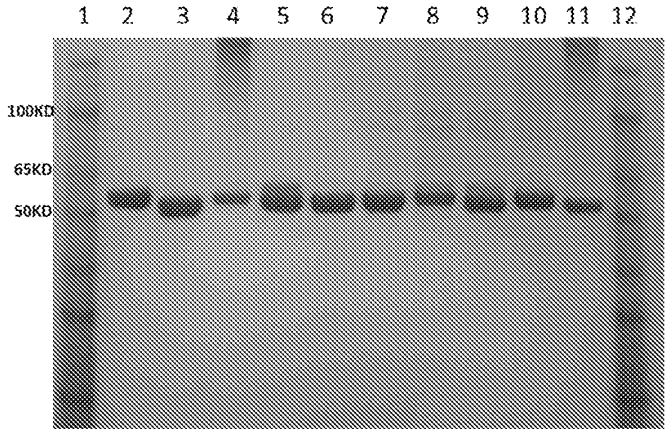

#33
#44
#48
#50
#52
#61
#76
#79
Normalized To Mode
YEL-HLin:: Yellow Fluorescence (YEL-HLin)
T2-92M
T2-AFP158
T2-P19

FIG. 8

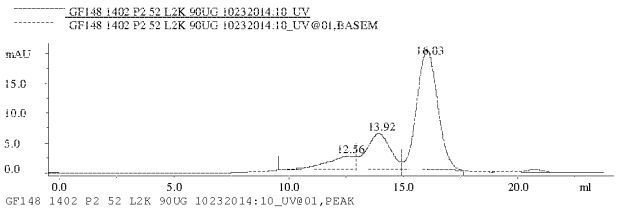


Lanes: (4ug each for L2K BiTE)

1. SeeBlue Plus Pre-Stained Standard
2. 1402-48 (Reduced)
3. 1402-50 (Reduced)
4. 1402-52 (Reduced)
5. 1402-54 (Reduced)
6. 1402-62 (Reduced)
7. 1402-67 (Reduced)
8. 1402-68 (Reduced)
9. 1402-69 (Reduced)
10. 1402-73 (Reduced)
11. 1402-74 (Reduced)
12. SeeBlue Plus Pre-Stained Standard

FIG. 9

#52

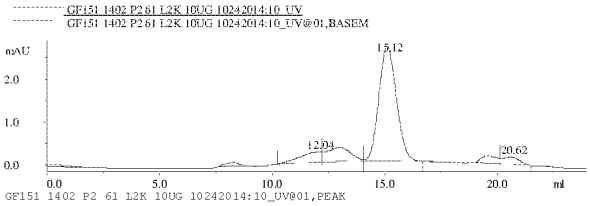


GF148 1402 P2 52 L2K 90UG 10232014:10_UV@01,PEAK

No	Ret ml	Area mAU*ml	Height mAU
1	12.56	3.0605	2.101
2	13.92	7.0356	5.867
3	16.03	21.0357	20.117

Total number of detected peaks = 88
Total area = 32.4973 mAU*ml
Area in evaluated peaks = 31.1319 mAU*ml
Ratio peak area / total area = 0.957984
Total peak width = 8.06 ml
Column height = 30.00 cm

#61

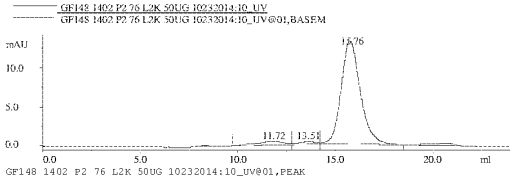


GF151 1402 P2 61 L2K 10UG 10242014:10_UV@01,PEAK

No	Ret ml	Area mAU*ml	Height mAU
1	12.04	0.2699	0.238
2	12.94	0.4000	0.324
3	15.12	2.3881	2.662
4	20.62	0.1501	0.175

Total number of detected peaks = 62
Total area = 3.7887 mAU*ml
Area in evaluated peaks = 3.2082 mAU*ml
Ratio peak area / total area = 0.846786
Total peak width = 7.83 ml
Column height = 30.00 cm

#76

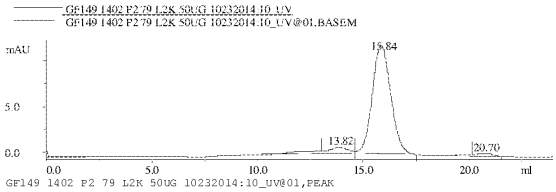


GF148 1402 P2 76 L2K 50UG 10232014:10_UV@01,PEAK

No	Ret ml	Area mAU*ml	Height mAU
1	11.72	0.7206	0.445
2	13.51	0.3320	0.287
3	15.76	15.1096	13.281

Total number of detected peaks = 59
Total area = 16.8711 mAU*ml
Area in evaluated peaks = 16.1623 mAU*ml
Ratio peak area / total area = 0.957985
Total peak width = 8.77 ml
Column height = 30.00 cm
Column V0 = 8.00 ml

#79



GF149 1402 P2 79 L2K 50UG 10232014:10_UV@01,PEAK

No	Ret ml	Area mAU*ml	Height mAU
1	13.82	0.6449	0.607
2	15.84	11.9062	11.765
3	20.70	0.2416	0.283

Total number of detected peaks = 72
Total area = 13.5685 mAU*ml
Area in evaluated peaks = 12.7928 mAU*ml
Ratio peak area / total area = 0.942827
Total peak width = 5.85 ml
Column height = 30.00 cm

FIG. 10

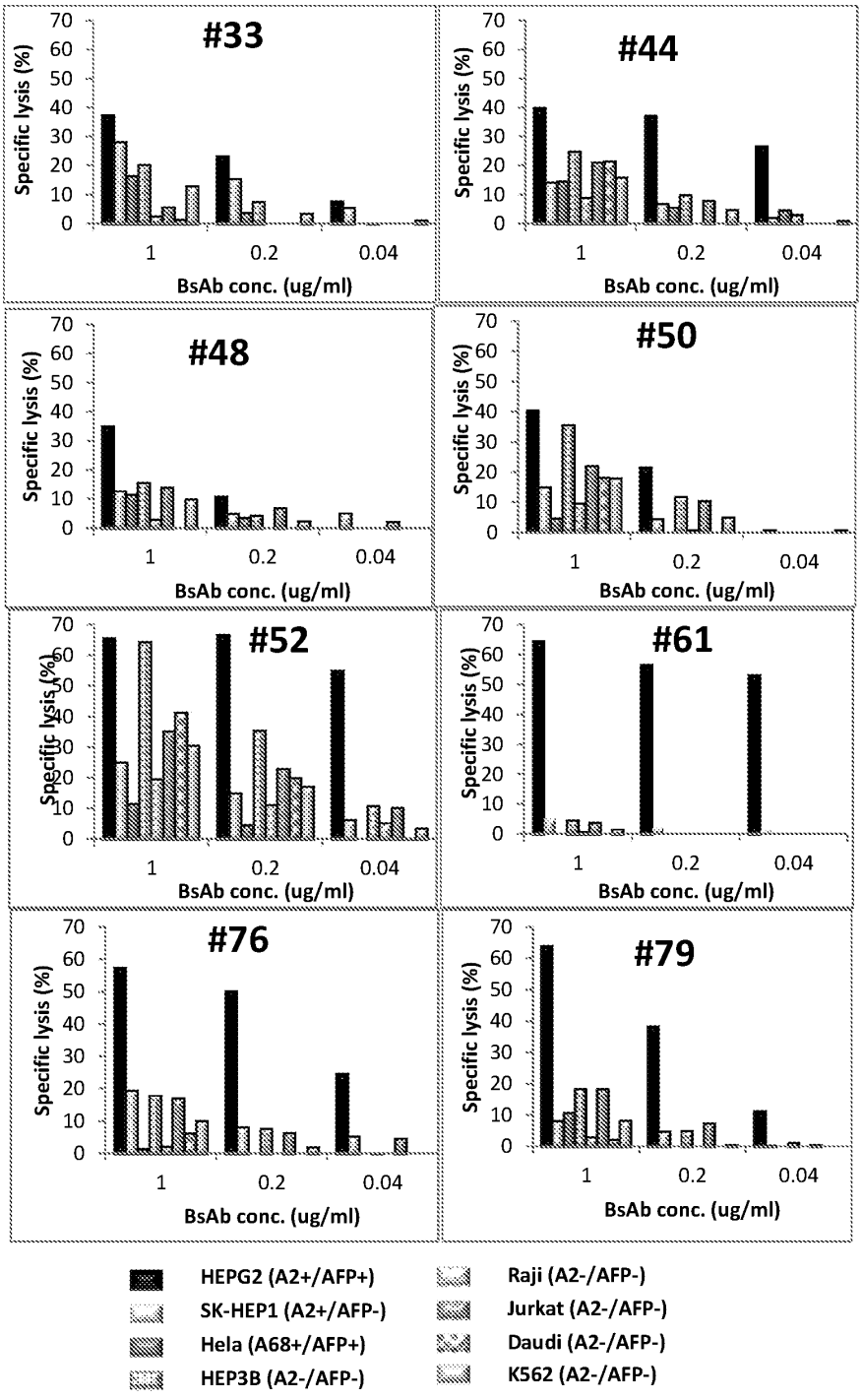

#33
#44
#48
#50
#52
#61
#76
#79
Specific lysis (%)
BsAb conc. (ug/ml)
1
0.2
0.04
HEPG2 (A2+/AFP+)
SK-HEP1 (A2+/AFP-)
Hela (A68+/AFP+)
HEP3B (A2-/AFP-)
Raji (A2-/AFP-)
Jurkat (A2-/AFP-)
Daudi (A2-/AFP-)
K562 (A2-/AFP-)

FIG. 11

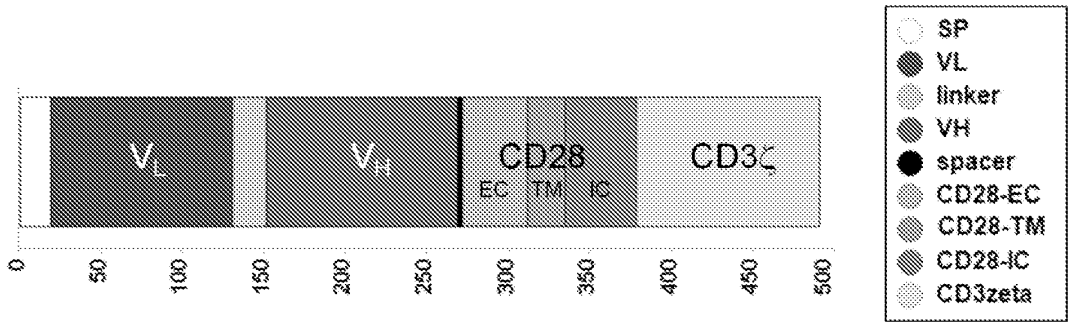

SP
VL
linker
VH
spacer
CD28-EC
CD28-TM
CD28-IC
CD3zeta
VL
VH
CD28
EC
TM
IC
CD3ζ
0
50
100
150
200
250
300
350
400
450
500
amino acids

FIG. 12

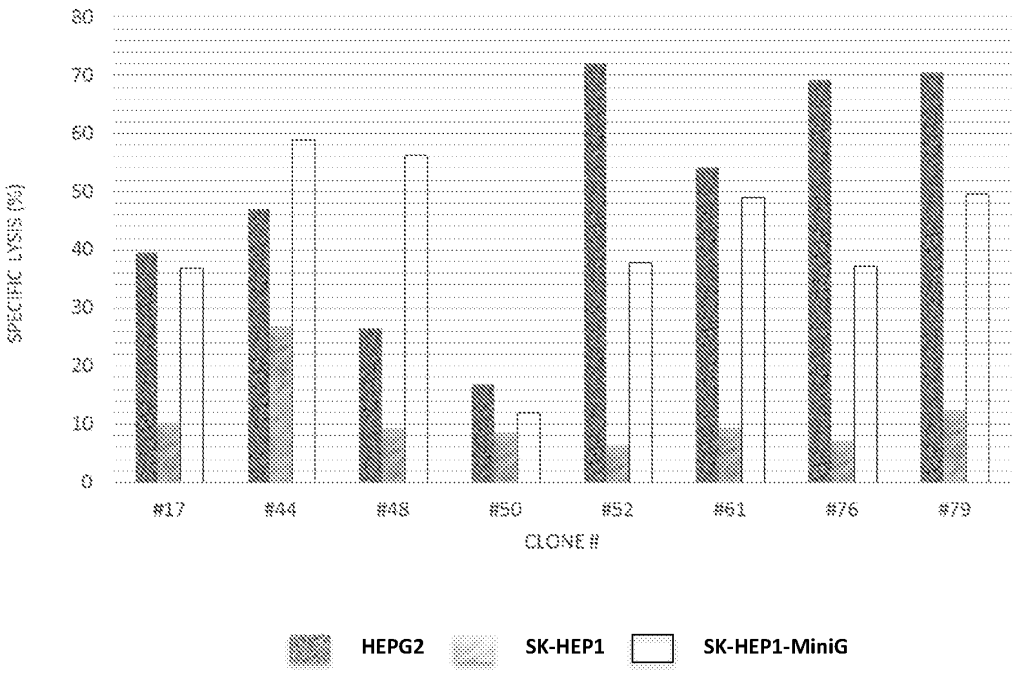
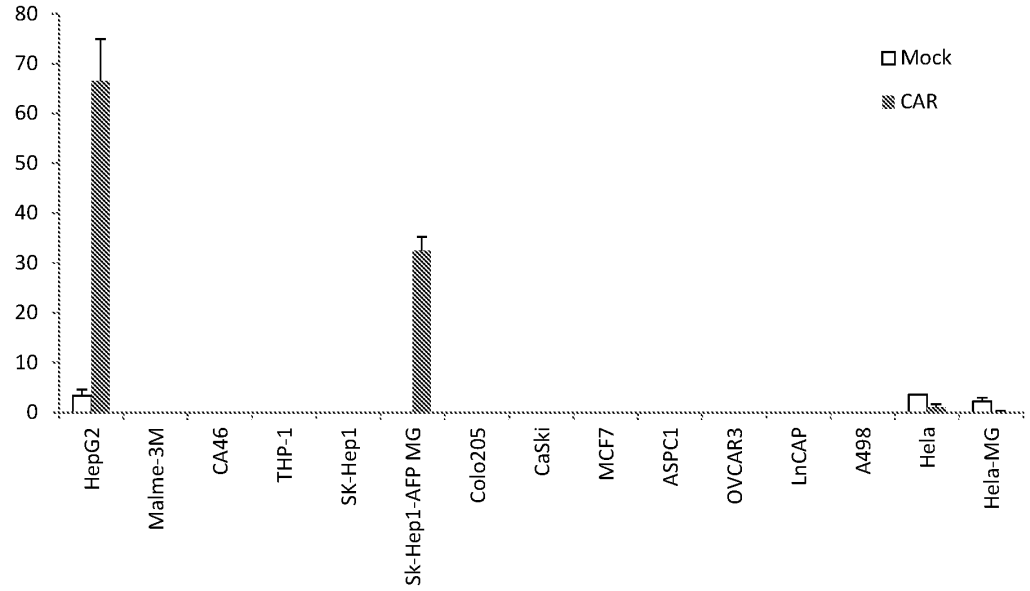

80
70
60
50
40
30
20
10
0
#17
#44
#48
#50
#52
#61
#76
#79
CLONE #
HEPG2
SK-HEP1
SK-HEP1-MiniG

FIG. 13



Cell Line	HepG2	Malme-3M	CA46	THP-1	SK-Hep1	SK-Hep1-MiniG	Colo205	CaSki	MCF7	ASPC1	OVCAR3	LnCAP	A498	HeLa	HeLa-MiniG
Tissue	liver	skin	haem	haem	liver	liver	colon	cervix	breast	pan-creas	ovary	pro-state	kidney	cervix	cervix
AFP	+	-	-	-	-	+	-	-	-	-	-	-	-	-	+
HLA-A02	+	+	+	+	+	+	+	+	+	-	+	+	+	-	-

FIG. 14A

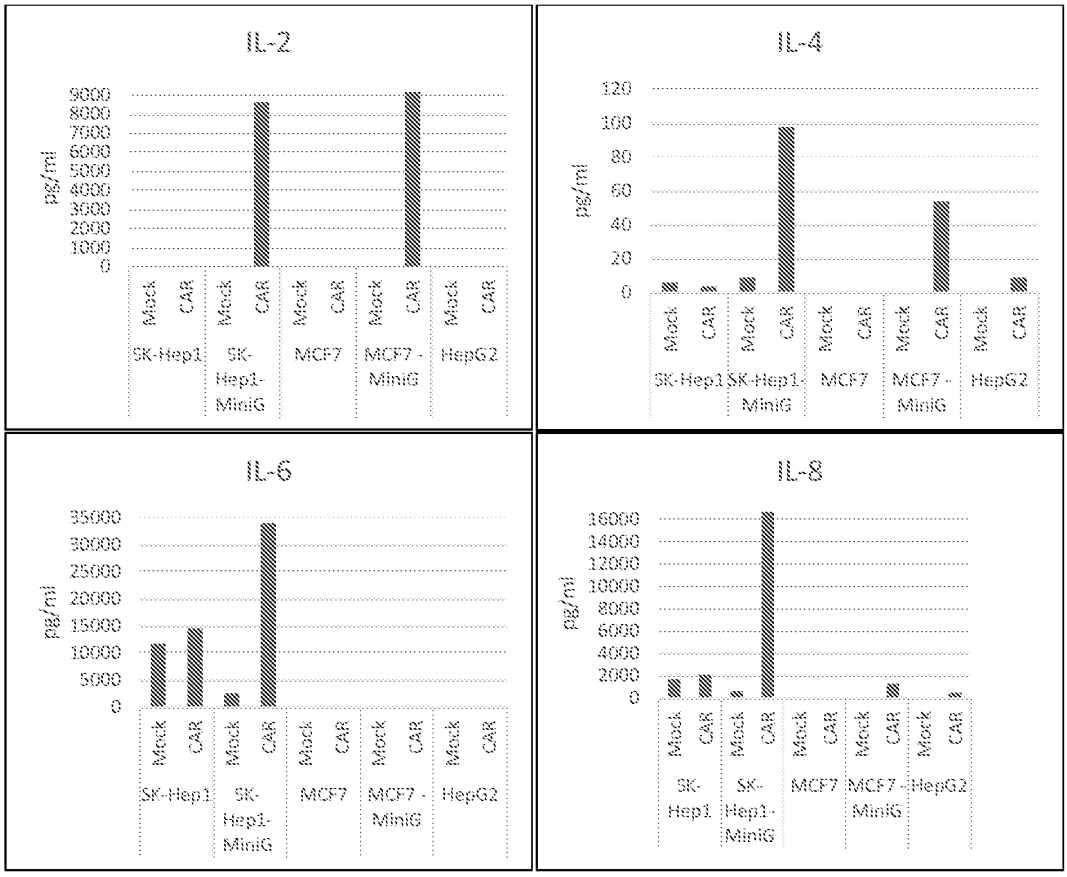

IL-2
pg/ml
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Mock
CAR
SK-Hep1
SK-Hep1-MiniG
MCF7
MCF7 - MiniG
HepG2
IL-4
pg/ml
120
100
80
60
40
20
0
IL-6
pg/ml
35000
30000
25000
20000
15000
10000
5000
0
IL-8
pg/ml
16000
14000
12000
10000
8000
6000
4000
2000
0

FIG. 14B

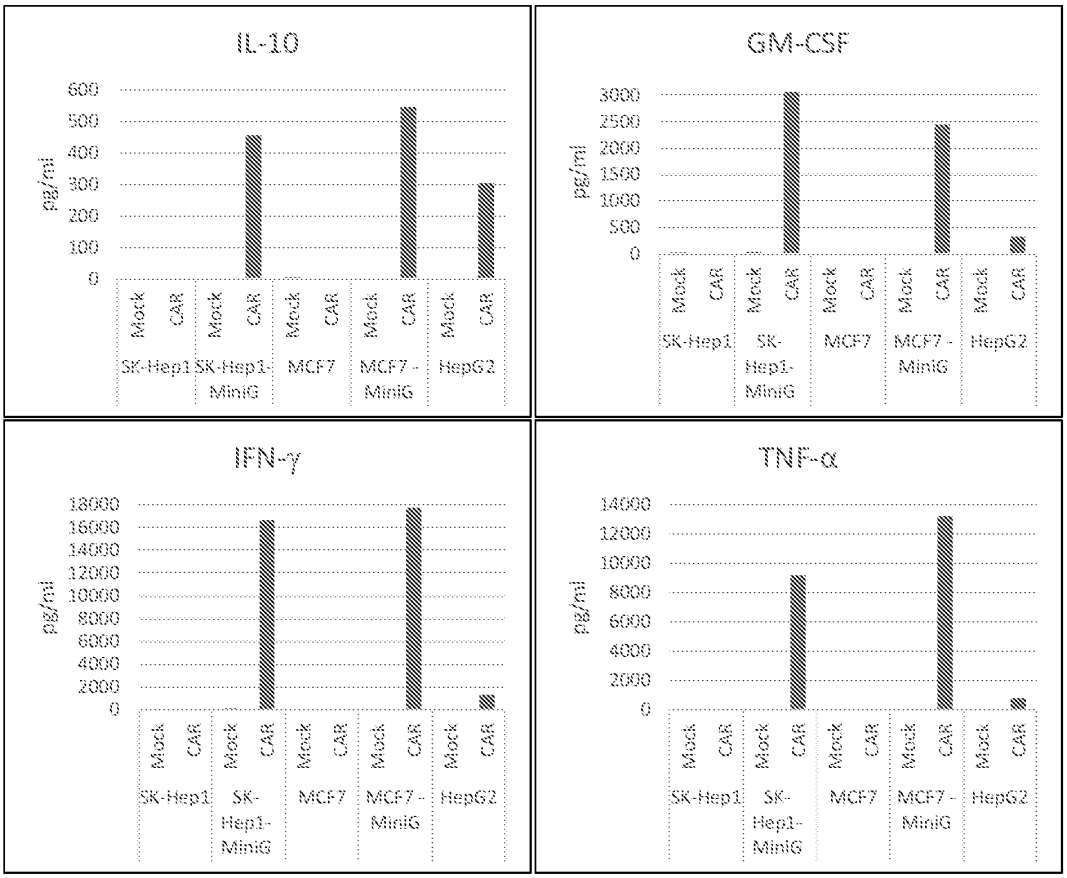

IL-10
pg/ml
600
500
400
300
200
100
0
Mock
CAR
SK-Hep1
SK-Hep1-MiniG
MCF7
MCF7 - MiniG
HepG2
GM-CSF
pg/ml
3000
2500
2000
1500
1000
500
0
IFN-γ
pg/ml
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
TNF-α
pg/ml
14000
12000
10000
8000
6000
4000
2000
0

FIG. 15A

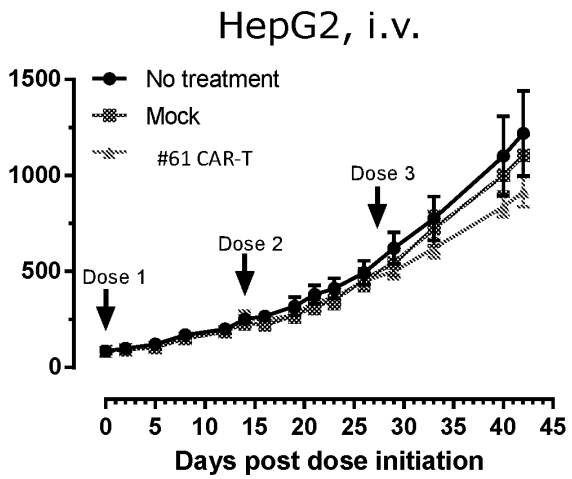
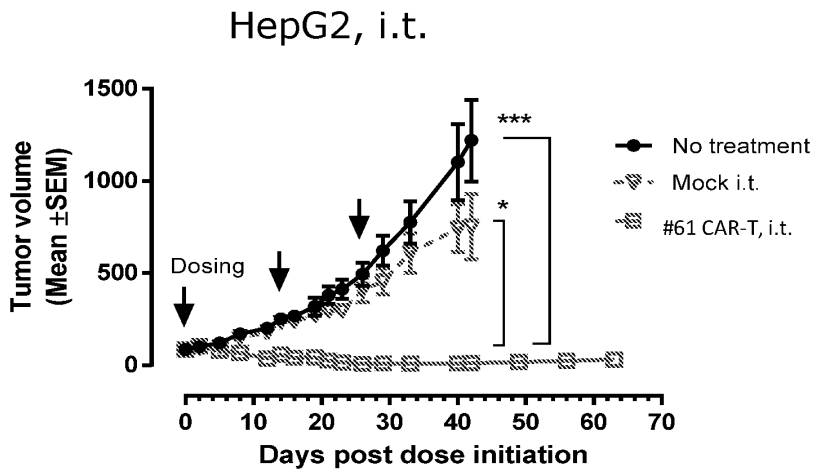


FIG. 15B



* Dunnet's test, P<0.05

*** Dunnet's test, P<0.001

FIG. 16A

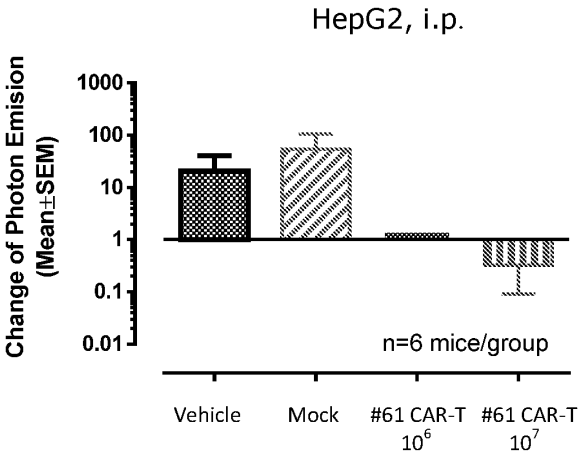


FIG. 16B

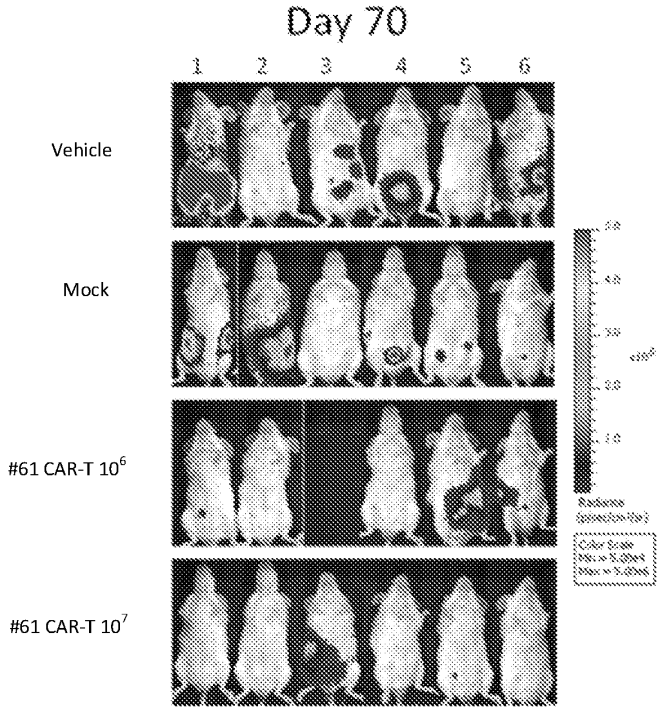


FIG. 17

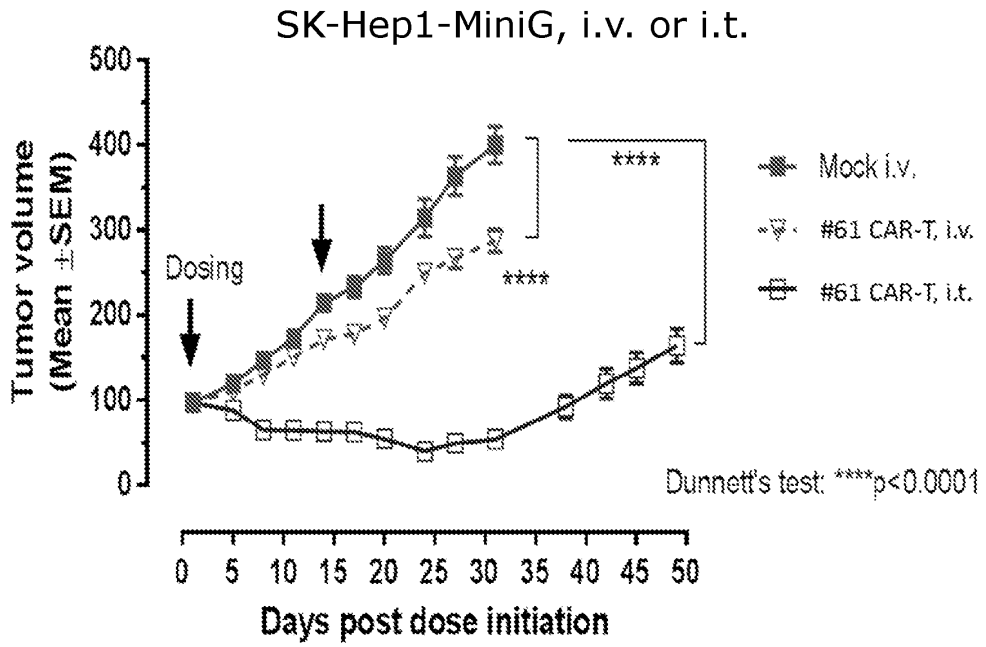
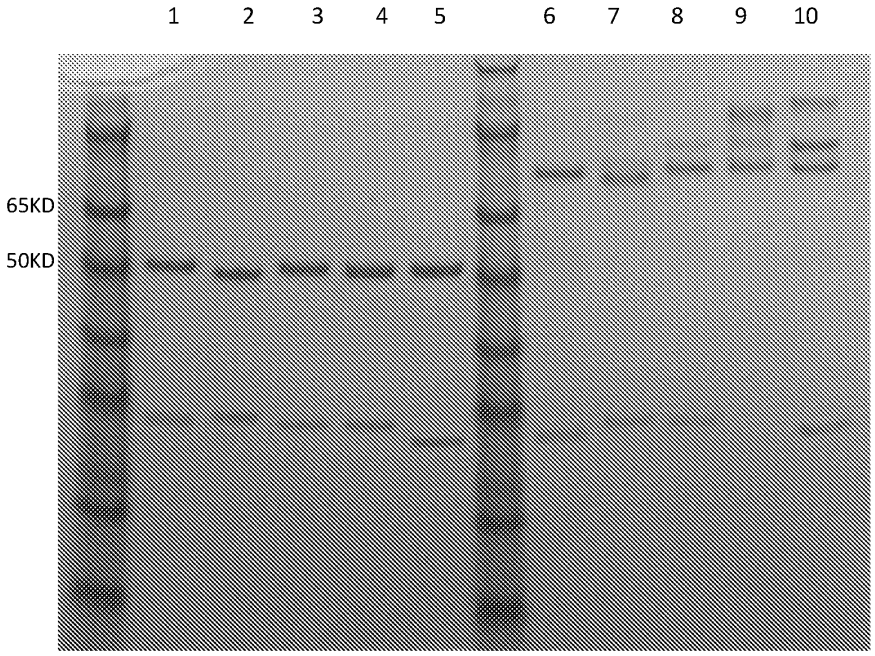

SK-Hep1-MiniG, i.v. or i.t.
Tumor volume (Mean ±SEM)
500
400
300
200
100
0
Dosing
****
****
Mock i.v.
#61 CAR-T, i.v.
#61 CAR-T, i.t.
Dunnett's test: ****p<0.0001
0 5 10 15 20 25 30 35 40 45 50
Days post dose initiation

FIG. 18



1. ET1402 mIgG1 52, REDUCED.
2. ET1402 mIgG1 61, REDUCED.
3. ET1402 mIgG1 76, REDUCED.
4. ET1402 mIgG1 79, REDUCED.
5. ET1402 mIgG1 control antibody, REDUCED.
6. ET1402 mIgG1 52, NON-REDUCED, NO HEAT.
7. ET1402 mIgG1 61, NON-REDUCED, NO HEAT.
8. ET1402 mIgG1 76, NON-REDUCED, NO HEAT.
9. ET1402 mIgG1 79, NON-REDUCED, NO HEAT.
10. ET1402 mIgG1 control antibody, NON-REDUCED, NO HEAT.

FIG. 19

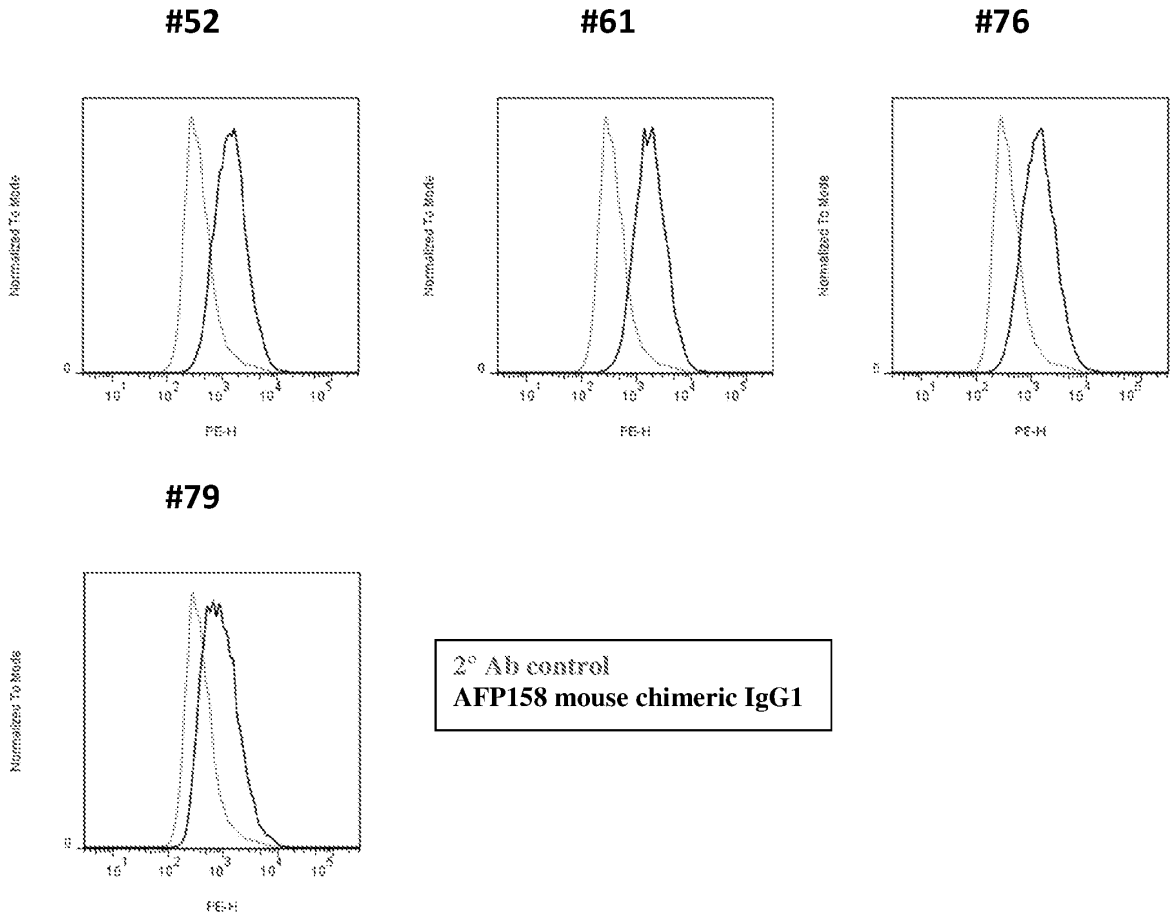

#52
#61
#76
#79
Normalized To Mode
PE-H
2° Ab control
AFP158 mouse chimeric IgG1

FIG. 20

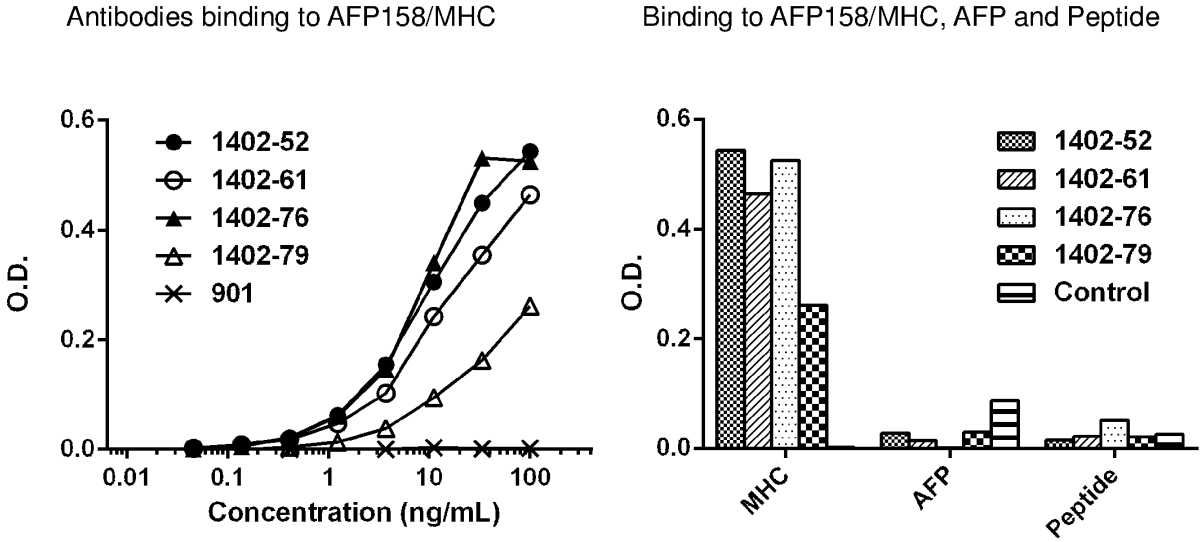

Antibodies binding to AFP158/MHC
O.D.
0.6
0.4
0.2
0.0
0.01
0.1
1
10
100
Concentration (ng/mL)
1402-52
1402-61
1402-76
1402-79
901
Binding to AFP158/MHC, AFP and Peptide
O.D.
0.6
0.4
0.2
0.0
MHC
AFP
Peptide
1402-52
1402-61
1402-76
1402-79
Control

FIG. 21

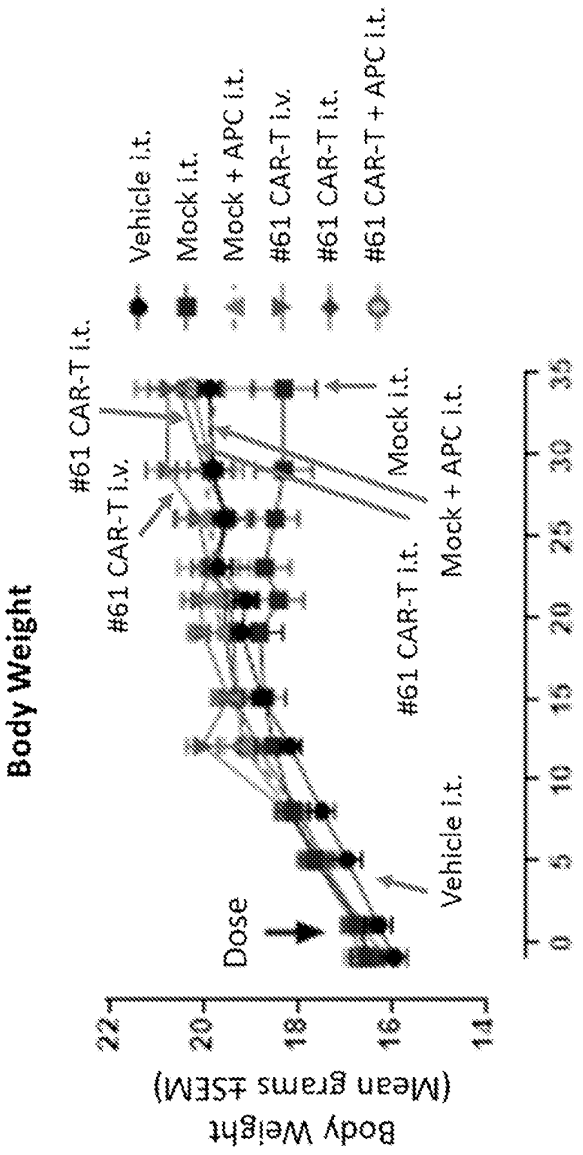

Body Weight
Body Weight (Mean grams ±SEM)
22
20
18
16
11
Dose
#61 CAR-T i.v.
#61 CAR-T i.t.
Vehicle i.t.
Mock i.t.
Mock + APC i.t.
0
5
10
15
20
25
30
35
Days post 1st dose
Vehicle i.t.
Mock i.t.
Mock + APC i.t.
#61 CAR-T i.v.
#61 CAR-T i.t.
#61 CAR-T + APC i.t.

FIG. 22

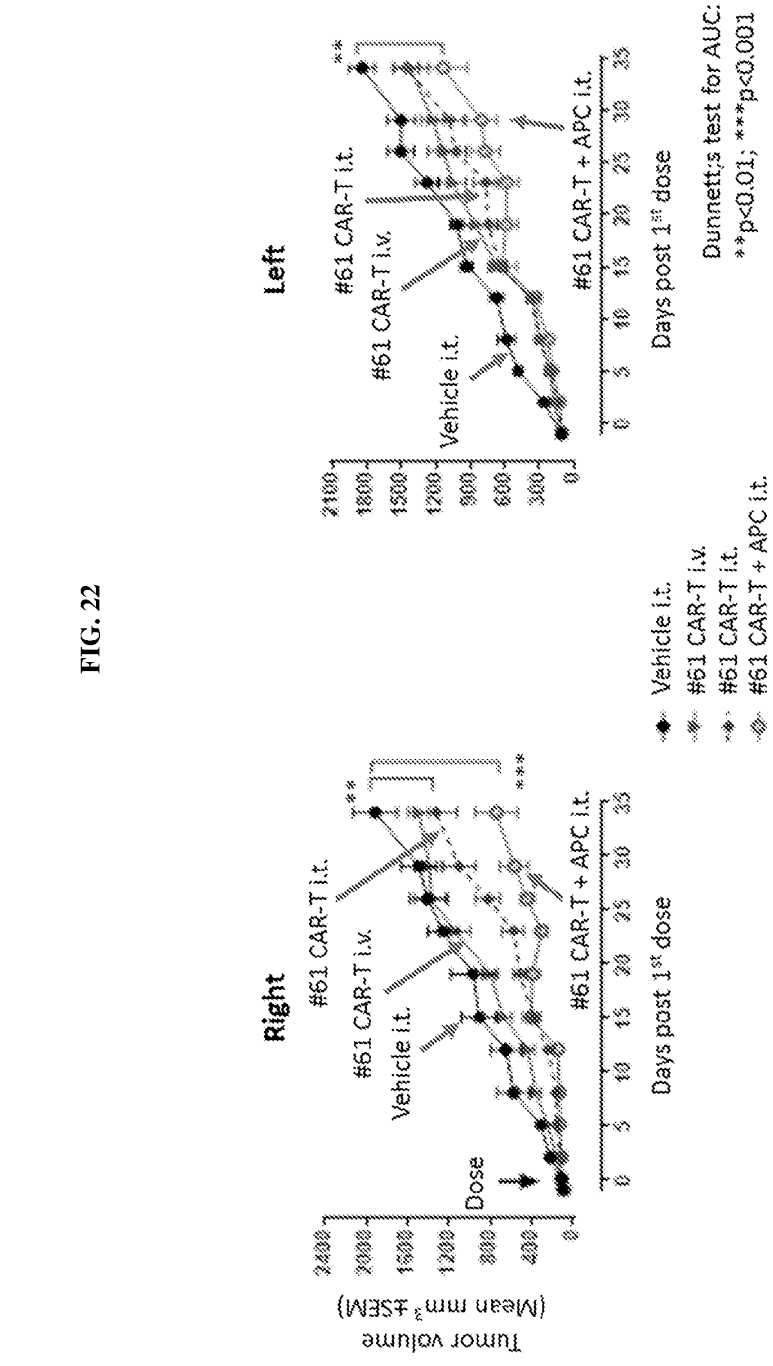
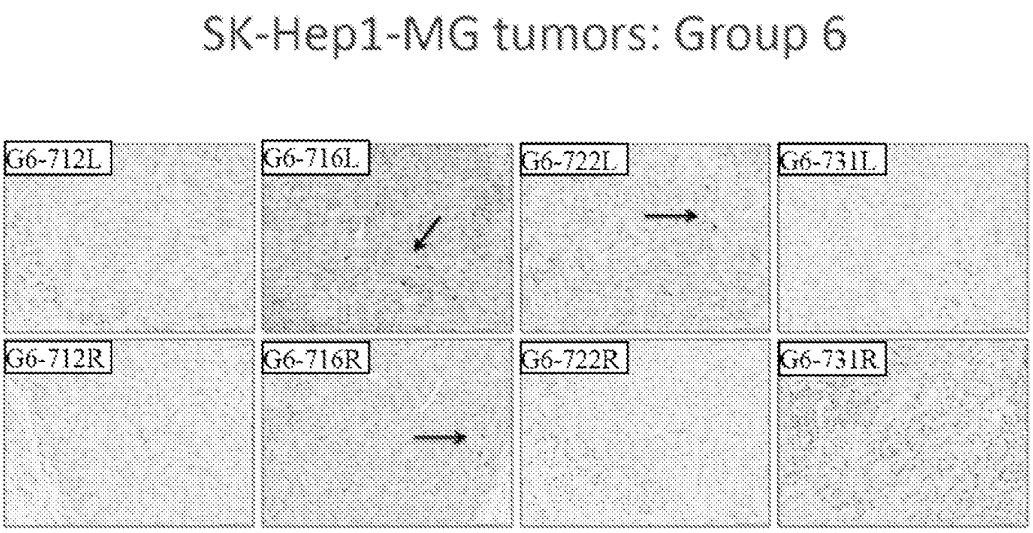

Right
Left
Tumor volume (Mean mm³ ±SEM)
Dose
Vehicle i.t.
#61 CAR-T i.v.
#61 CAR-T i.t.
#61 CAR-T + APC i.t.
Days post 1st dose
Dunnett;s test for AUC:
**p<0.01; ***p<0.001

FIG. 23



Biocare anti-human CD3 (1:50), pH 6.2 Ag Retrieval, Biocare Universal Detection, 20X

FIG. 24

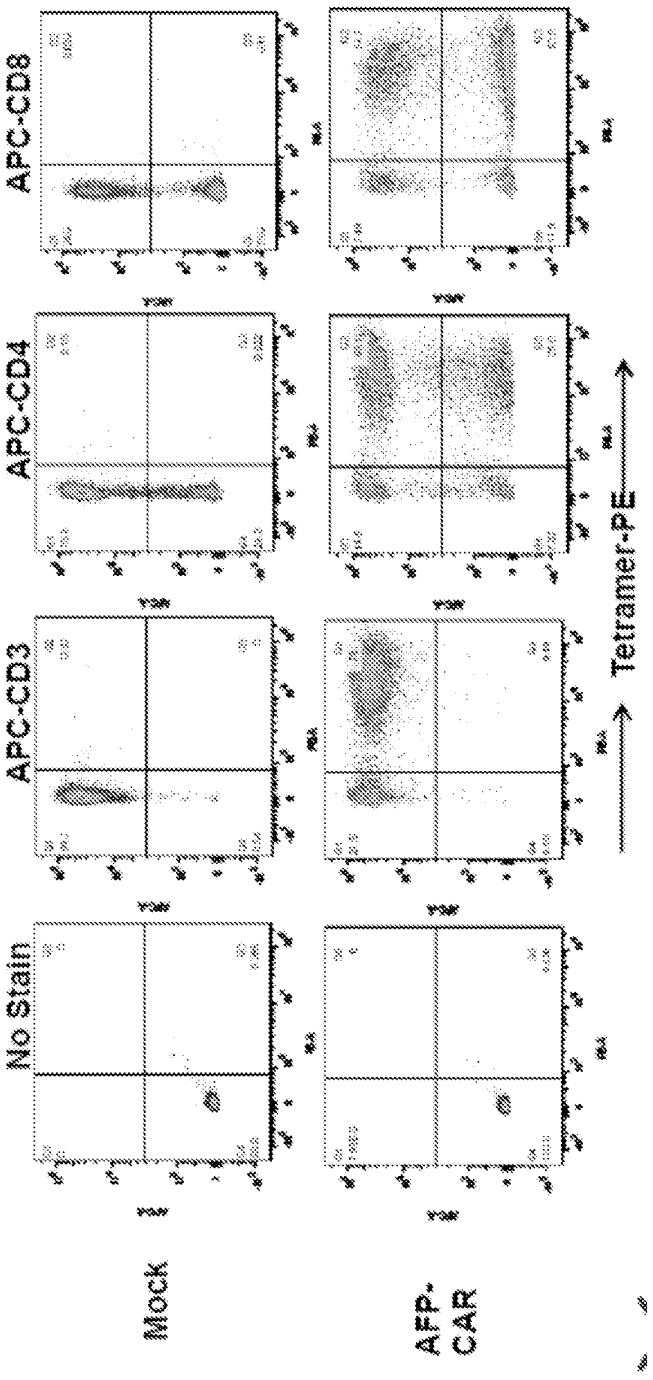


FIG. 25

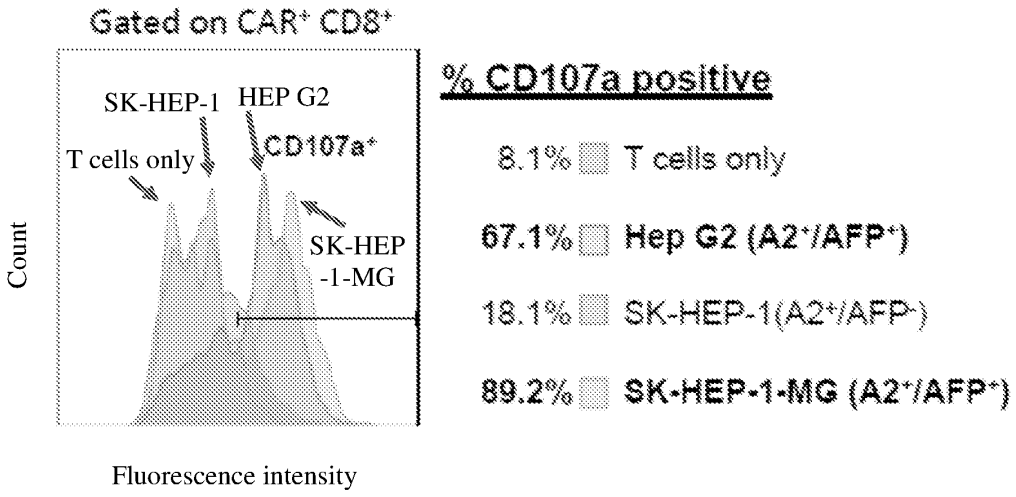

Gated on CAR+ CD8+
SK-HEP-1
HEP G2
T cells only
CD107a+
SK-HEP
-1-MG
Count
Fluorescence intensity
% CD107a positive
8.1% T cells only
67.1% Hep G2 (A2+/AFP+)
18.1% SK-HEP-1(A2+/AFP-)
89.2% SK-HEP-1-MG (A2+/AFP+)

FIG. 26

