
pBB-BCMA02
MND
SP
V_L (C11D5.3)
218
linker
V_H (C11D5.3)
CD8
hinge
CD8
TM
4-1BB
CD3 ξ

FIG. 1

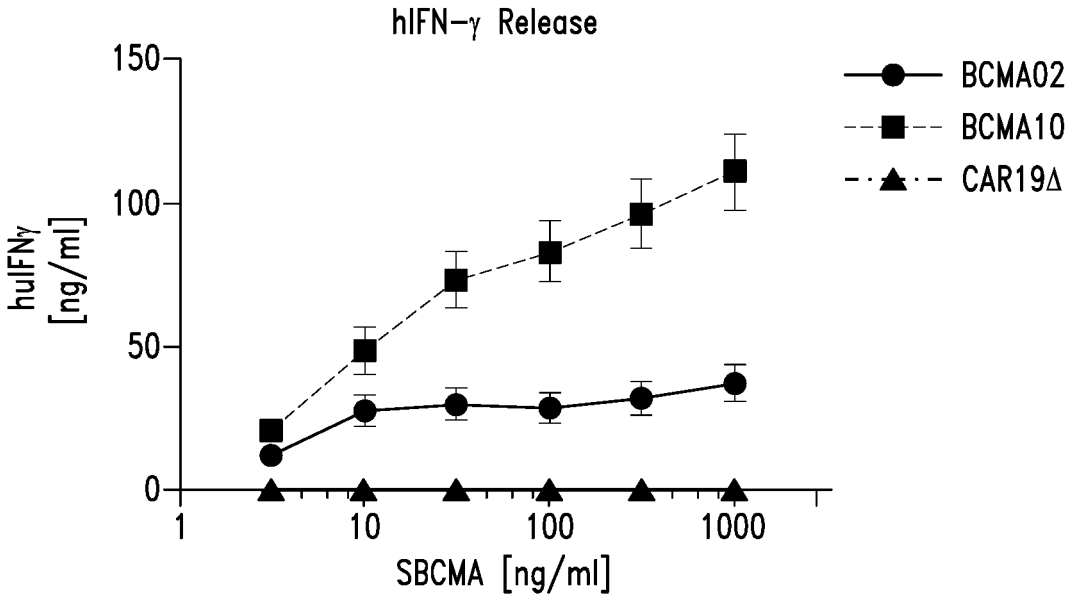

hIFN-γ Release
150
100
50
0
huIFNγ [ng/ml]
1
10
100
1000
SBCMA [ng/ml]
BCMA02
BCMA10
CAR19Δ

FIG. 2A

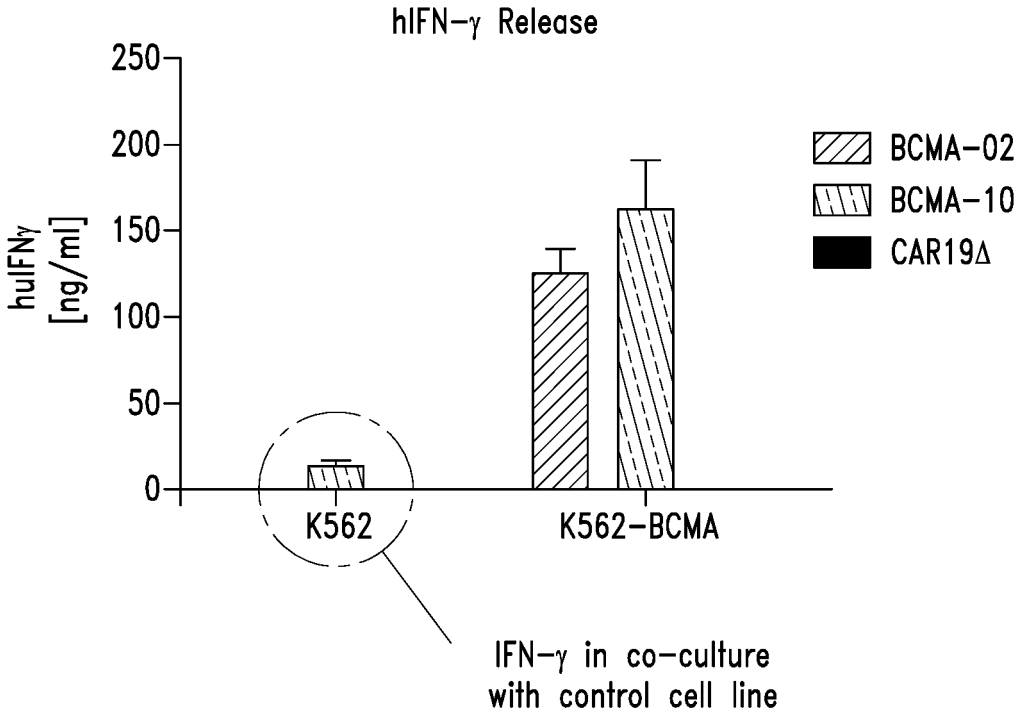

hIFN-γ Release
250
200
150
100
50
0
huIFNγ [ng/ml]
BCMA-02
BCMA-10
CAR19Δ
K562
K562-BCMA
IFN-γ in co-culture with control cell line

FIG. 2B

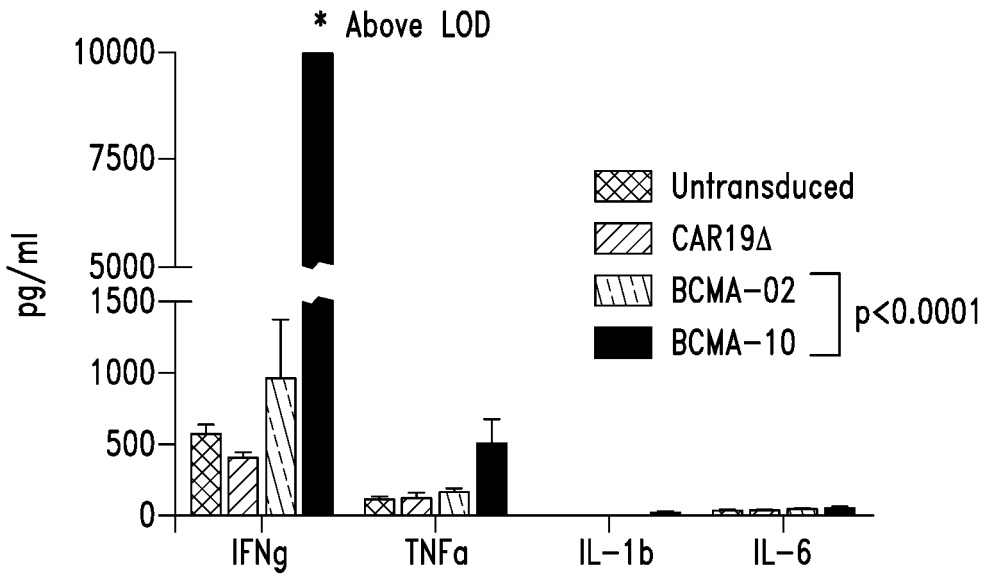

* Above LOD
10000
7500
5000
1500
1000
500
0
pg/ml
Untransduced
CAR19Δ
BCMA-02
BCMA-10
p<0.0001
IFNg
TNFa
IL-1b
IL-6

FIG. 3

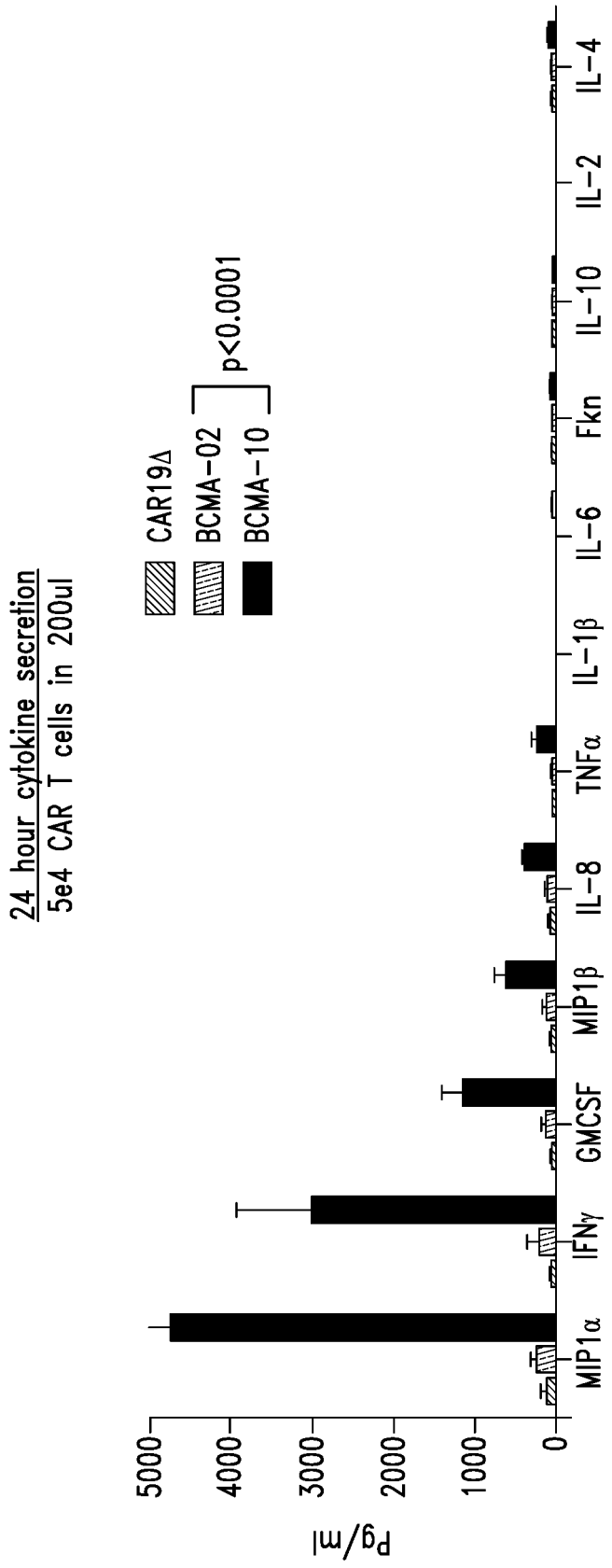

24 hour cytokine secretion
5e4 CAR T cells in 200ul
CAR19Δ
BCMA-02
BCMA-10
p<0.0001
pg/ml
5000
4000
3000
2000
1000
0
MIP1α
IFNγ
GMCSF
MIP1β
IL-8
TNFα
IL-1β
IL-6
Fkn
IL-10
IL-2
IL-4

FIG. 4

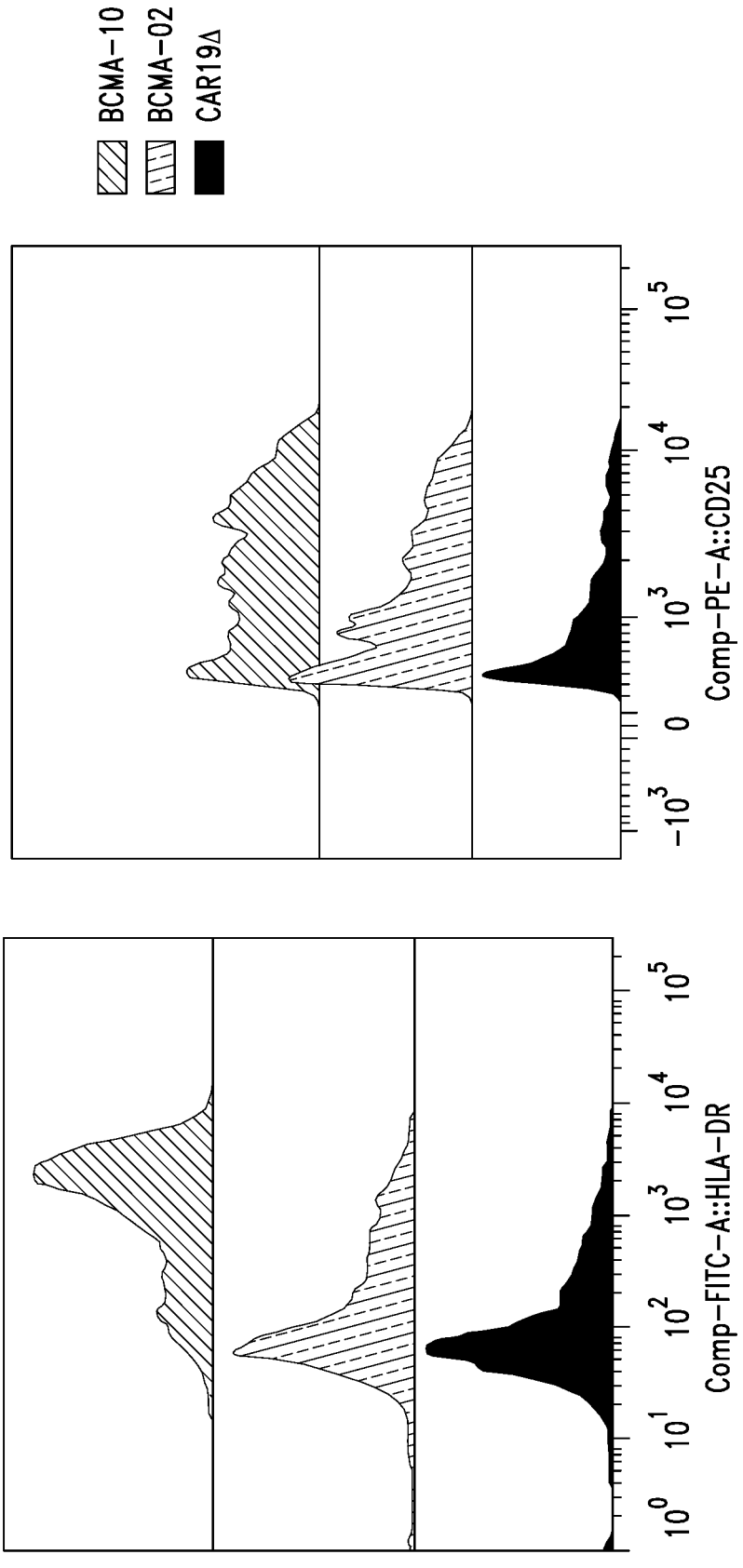

BCMA-10
BCMA-02
CAR19Δ
Comp-PE-A::CD25
-10^3 0 10^3 10^4 10^5
CD25
Comp-FITC-A::HLA-DR
10^0 10^1 10^2 10^3 10^4 10^5
HLA-DR

FIG. 5

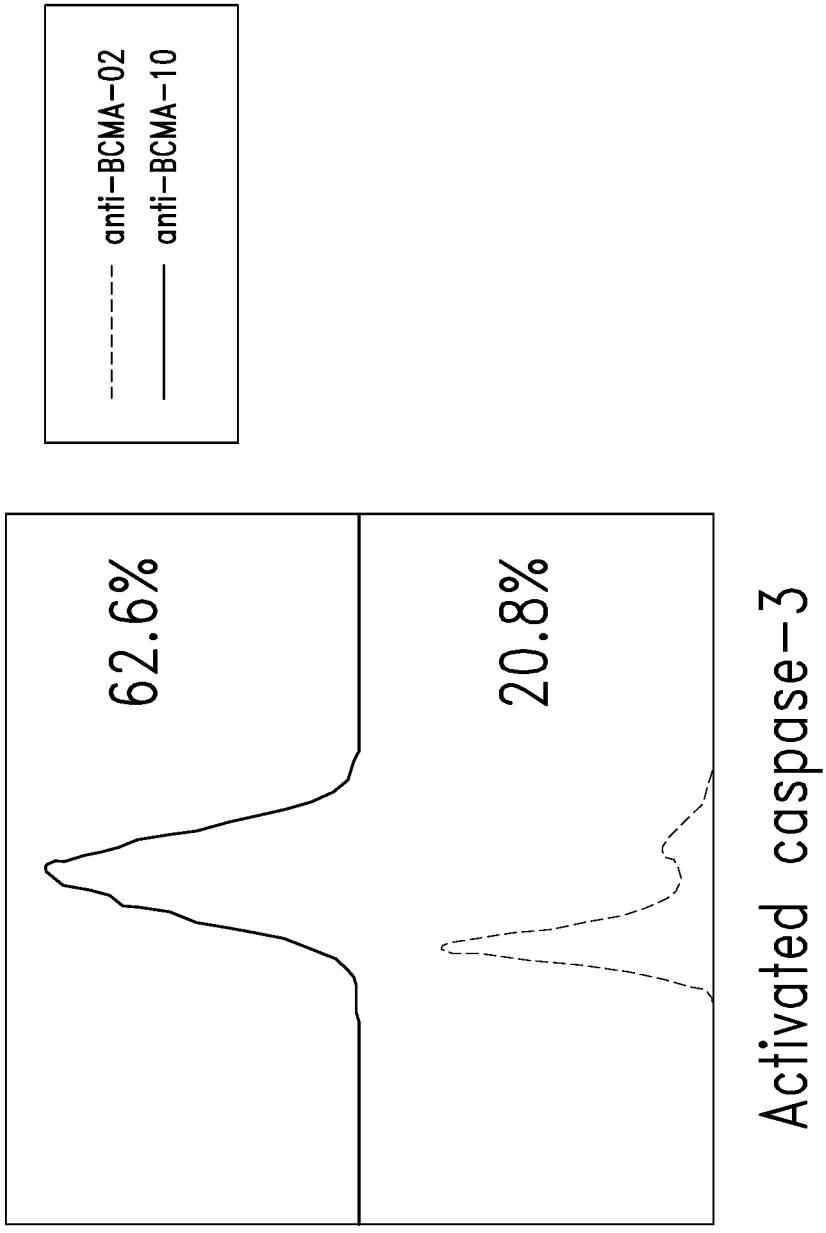


FIG. 6

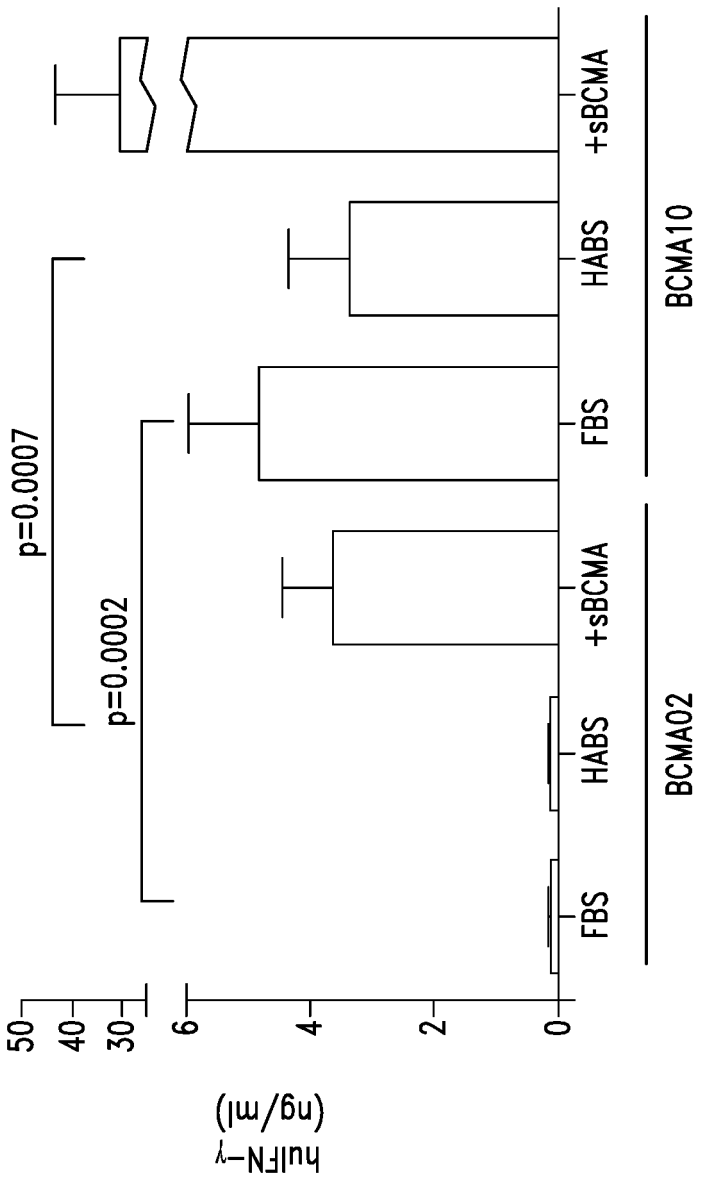

hulFN-γ
(ng/ml)
50
40
30
6
4
2
0
p=0.0007
p=0.0002
FBS
HABS
+sBCMA
FBS
HABS
+sBCMA
BCMA02
BCMA10

FIG. 7

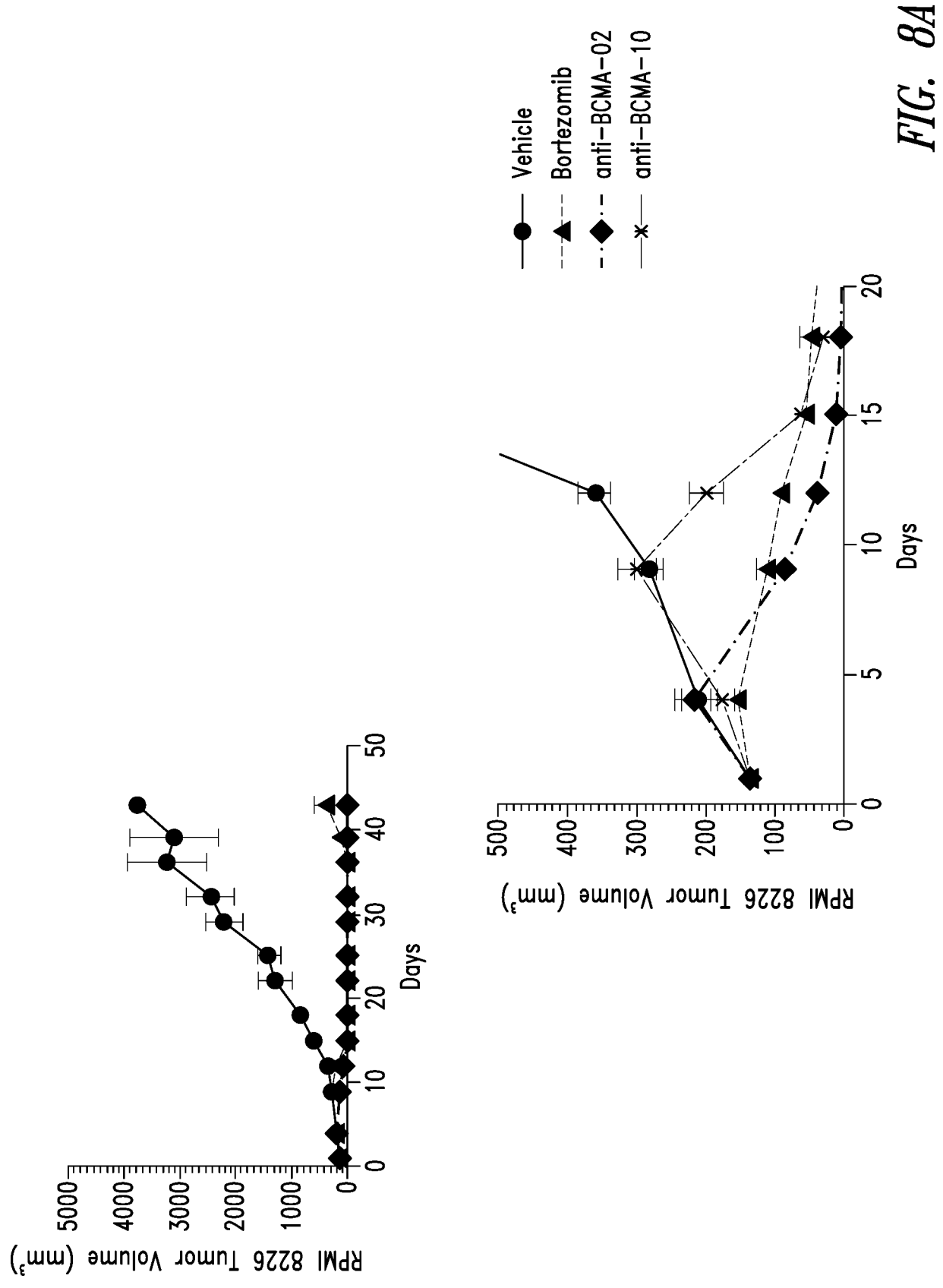

RPMI 8226 Tumor Volume (mm³)
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
Days
RPMI 8226 Tumor Volume (mm³)
500
400
300
200
100
0
0
5
10
15
20
Days
Vehicle
Bortezomib
anti-BCMA-02
anti-BCMA-10

FIG. 8A

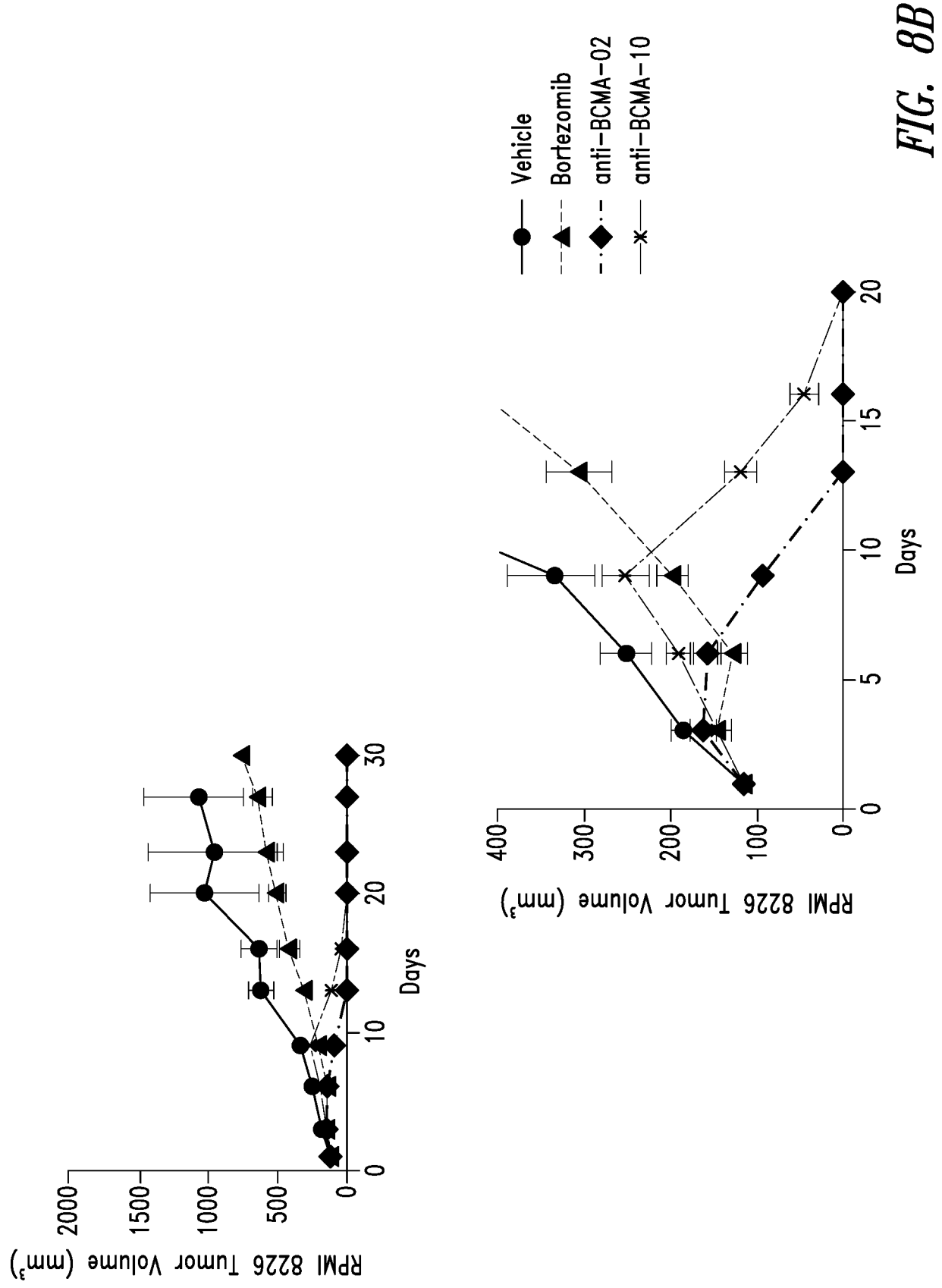

RPMI 8226 Tumor Volume (mm³)
2000
1500
1000
500
0
0
10
20
30
Days
RPMI 8226 Tumor Volume (mm³)
400
300
200
100
0
0
5
10
15
20
Days
Vehicle
Bortezomib
anti-BCMA-02
anti-BCMA-10

FIG. 8B

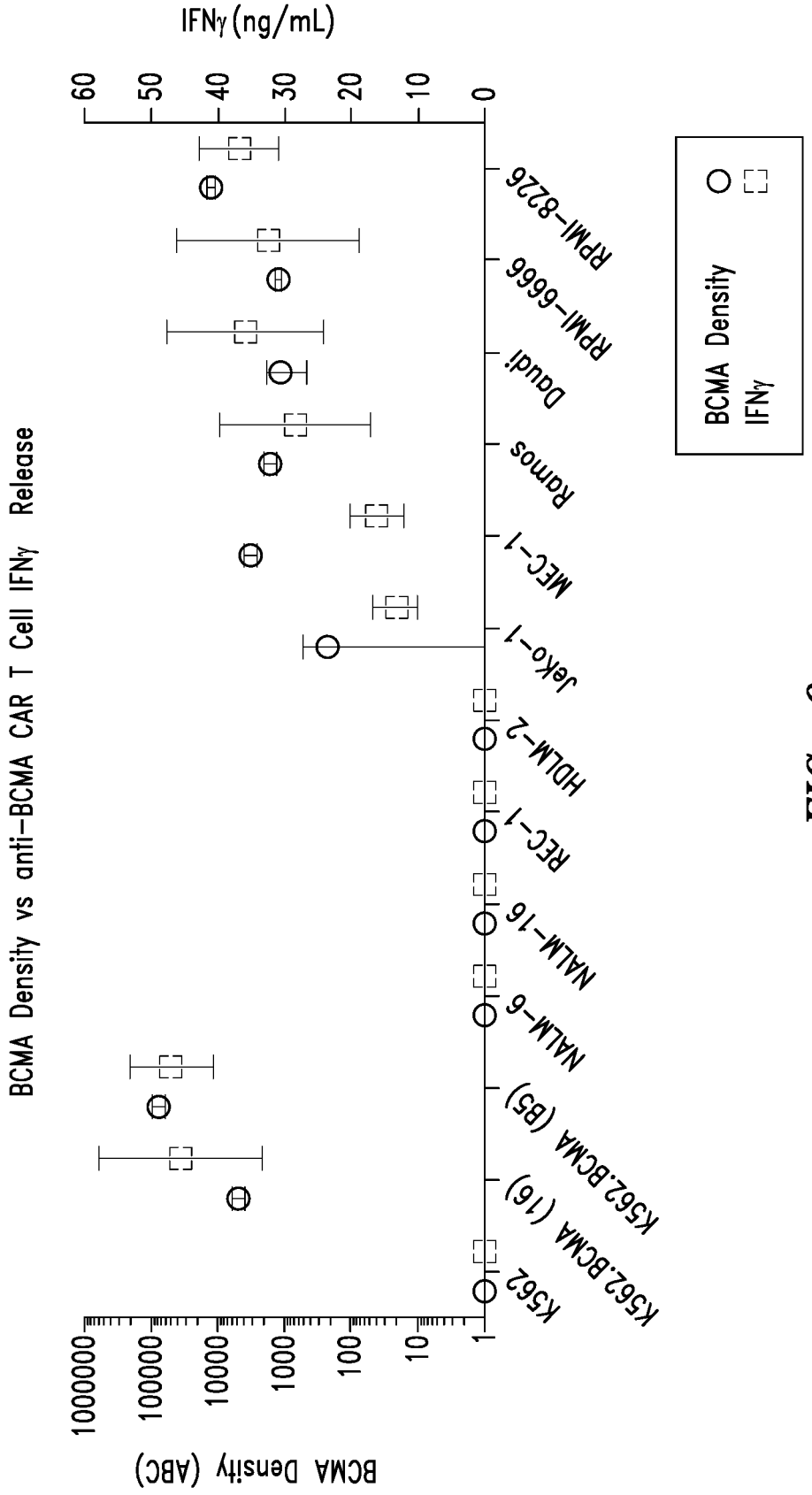

BCMA Density vs anti-BCMA CAR T Cell IFNγ Release
IFNγ (ng/mL)
60
50
40
30
20
10
0
BCMA Density
IFNγ
RPMI-8226
RPMI-6666
Daudi
Ramos
MEC-1
Jeko-1
HDLM-2
REC-1
NALM-16
NALM-6
K562.BCMA (B5)
K562.BCMA (16)
K562
BCMA Density (ABC)
1000000
100000
10000
1000
100
10
1

FIG. 9

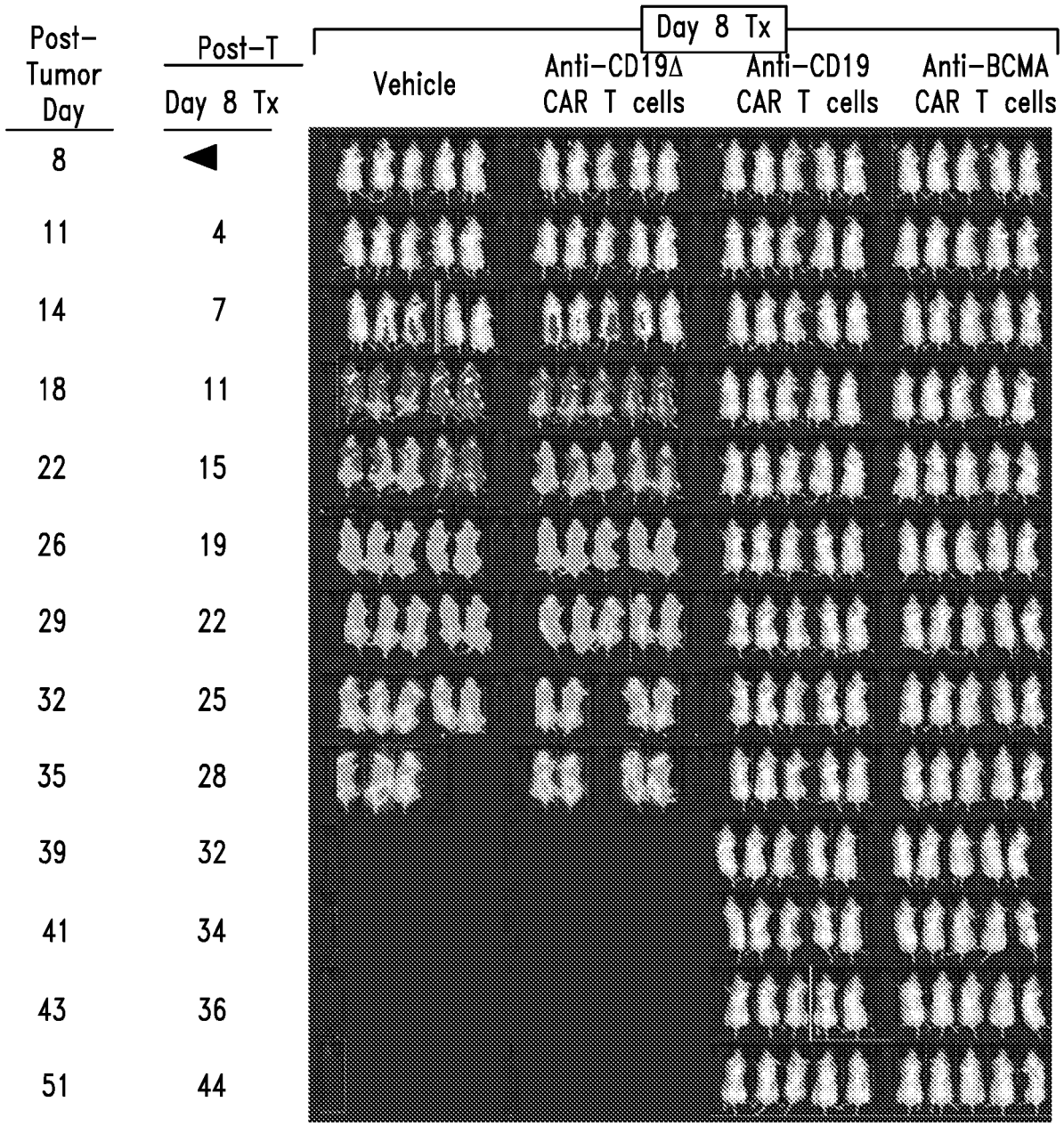

Post-Tumor Day
Post-T Day 8 Tx
Day 8 Tx
Vehicle
Anti-CD19Δ CAR T cells
Anti-CD19 CAR T cells
Anti-BCMA CAR T cells
8
11
14
18
22
26
29
32
35
39
41
43
51
4
7
11
15
19
22
25
28
32
34
36
44

FIG. 10A

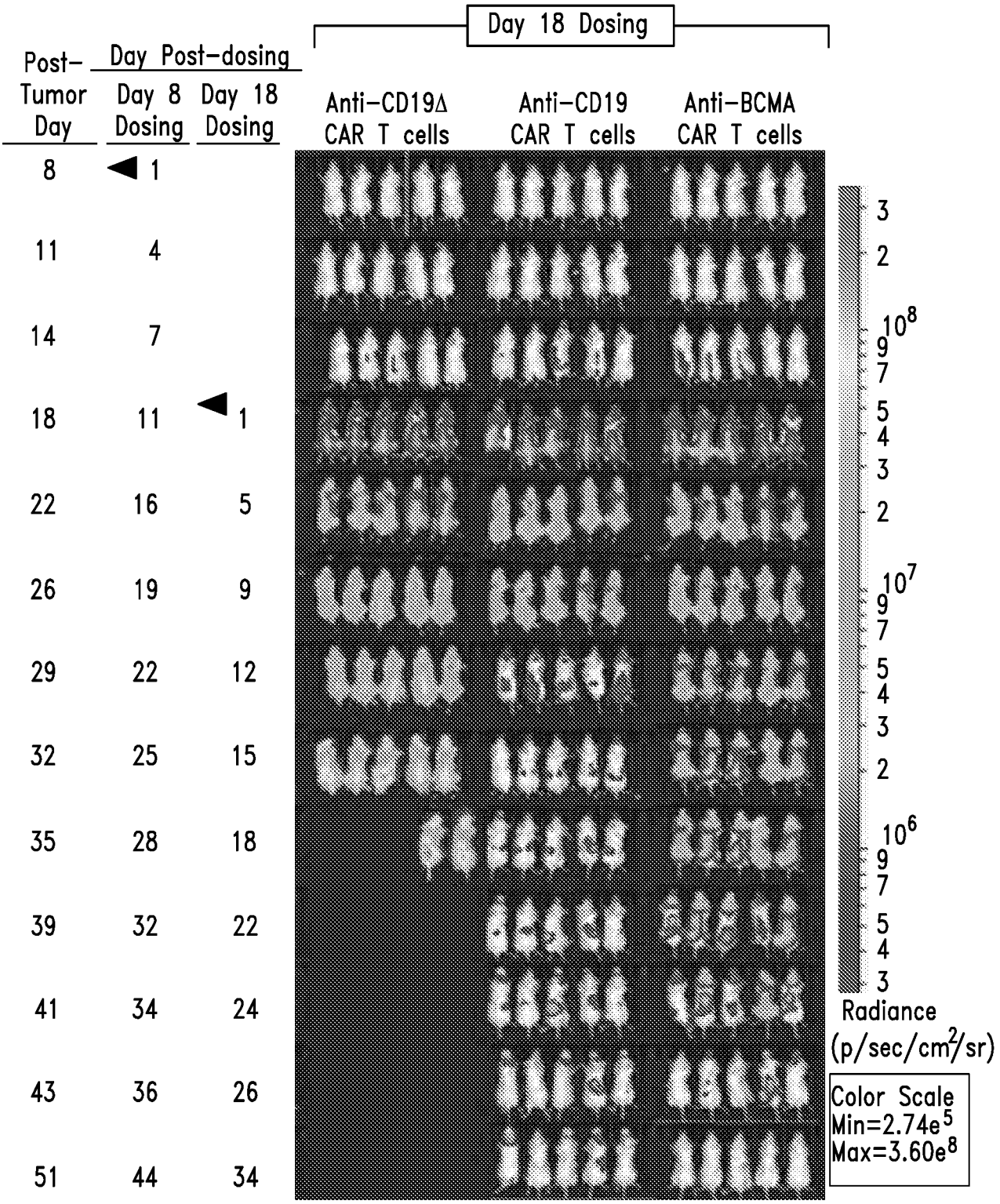

Day 18 Dosing
Post-Tumor Day
Day Post-dosing
Day 8 Dosing
Day 18 Dosing
Anti-CD19Δ CAR T cells
Anti-CD19 CAR T cells
Anti-BCMA CAR T cells
8 1
11 4
14 7
18 11 1
22 16 5
26 19 9
29 22 12
32 25 15
35 28 18
39 32 22
41 34 24
43 36 26
51 44 34
3
2
10^8
9
7
5
4
3
2
10^7
9
7
5
4
3
2
10^6
9
7
5
4
3
Radiance (p/sec/cm²/sr)
Color Scale
Min=2.74e^5
Max=3.60e^8

FIG. 10B

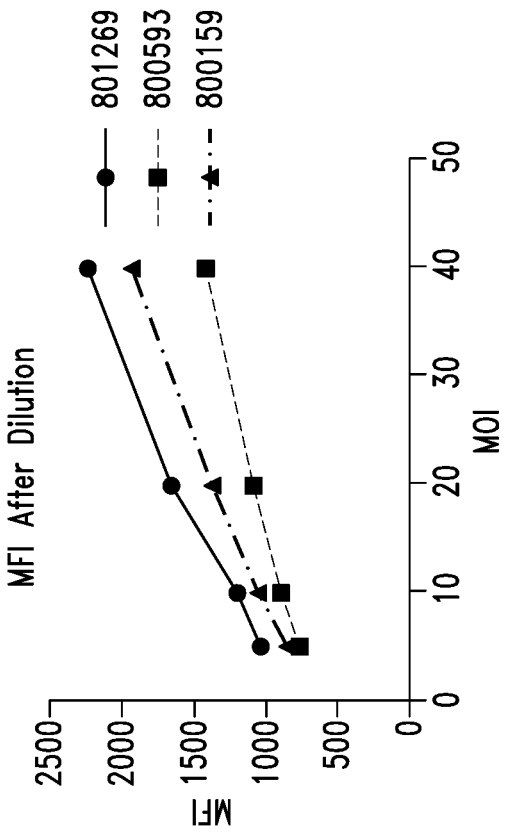


FIG. 11B

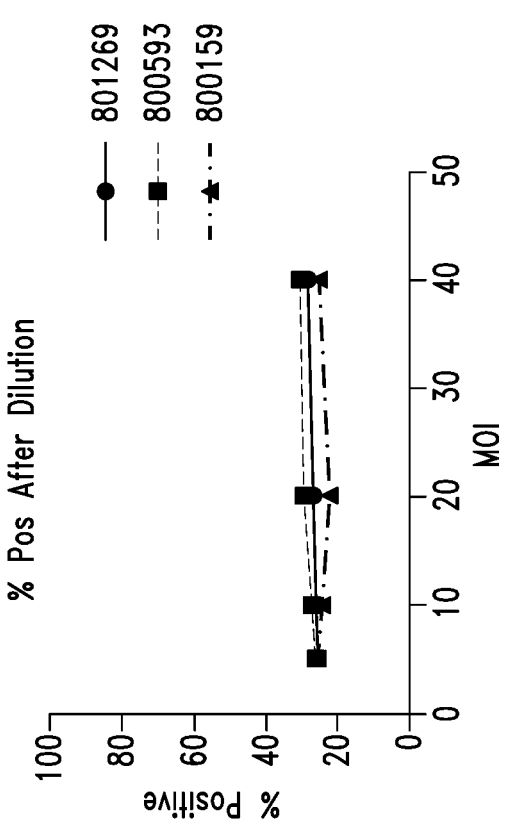


FIG. 11A

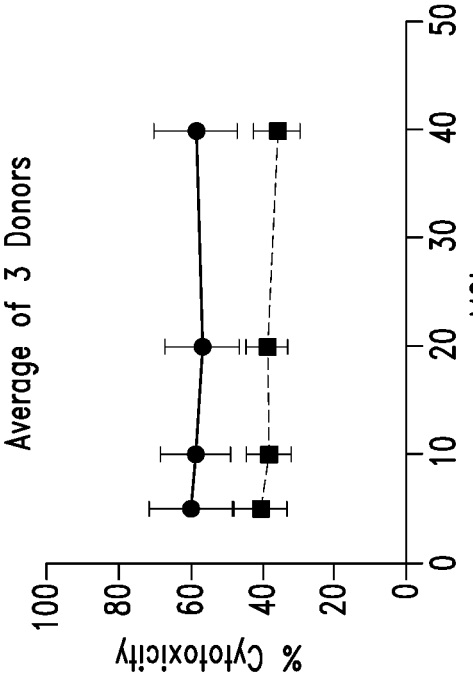


FIG. 11C

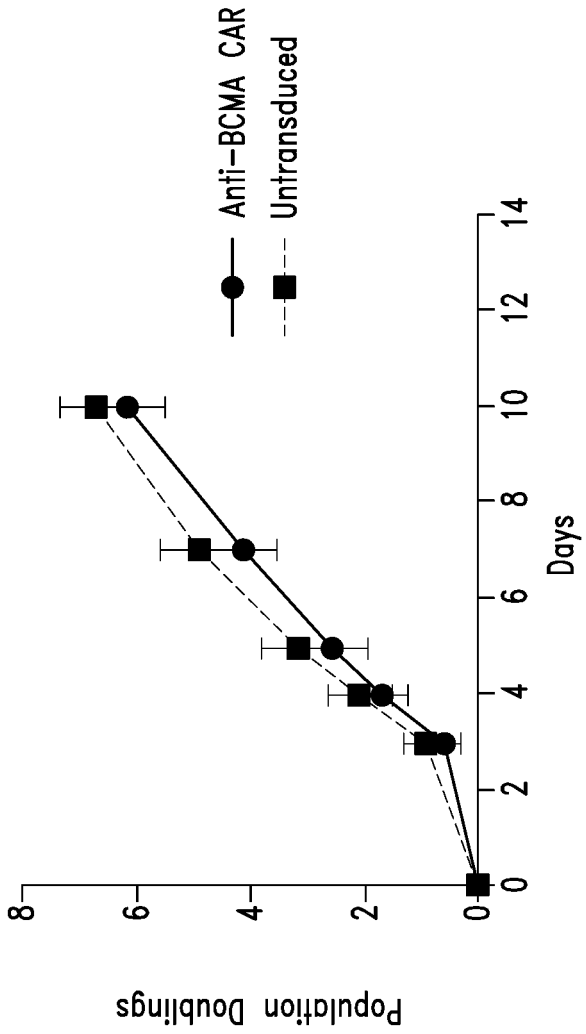

Anti-BCMA CAR
Untransduced
Population Doublings
Days
0
2
4
6
8
10
12
14

FIG. 12A

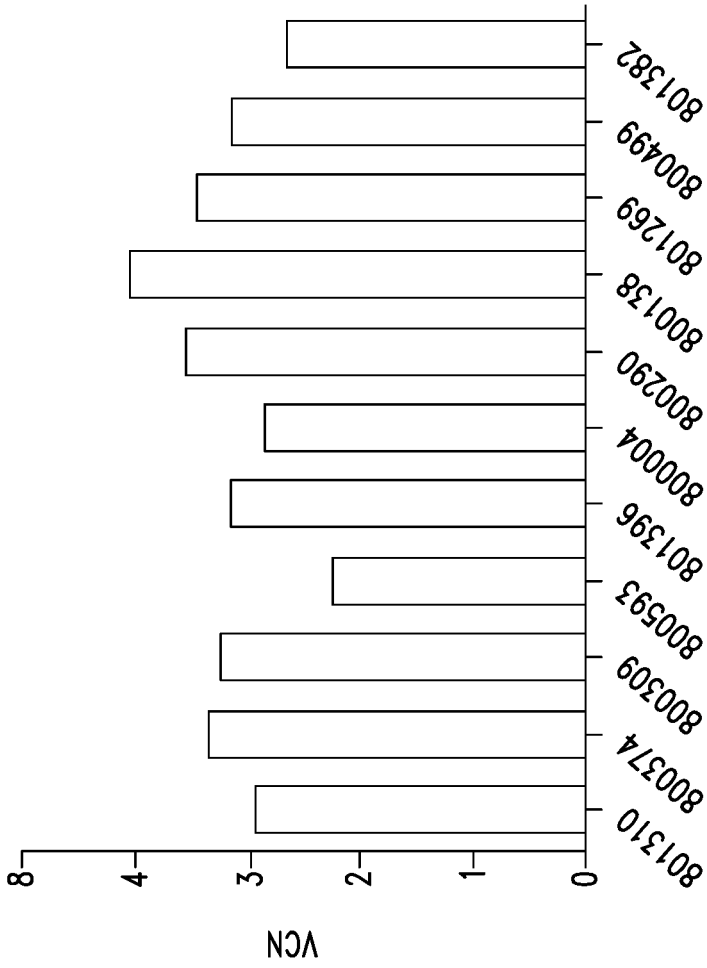

801310
800374
800309
800593
801396
800004
800290
800138
801269
800499
801382
0
1
2
3
4
8
VCN

FIG. 12B

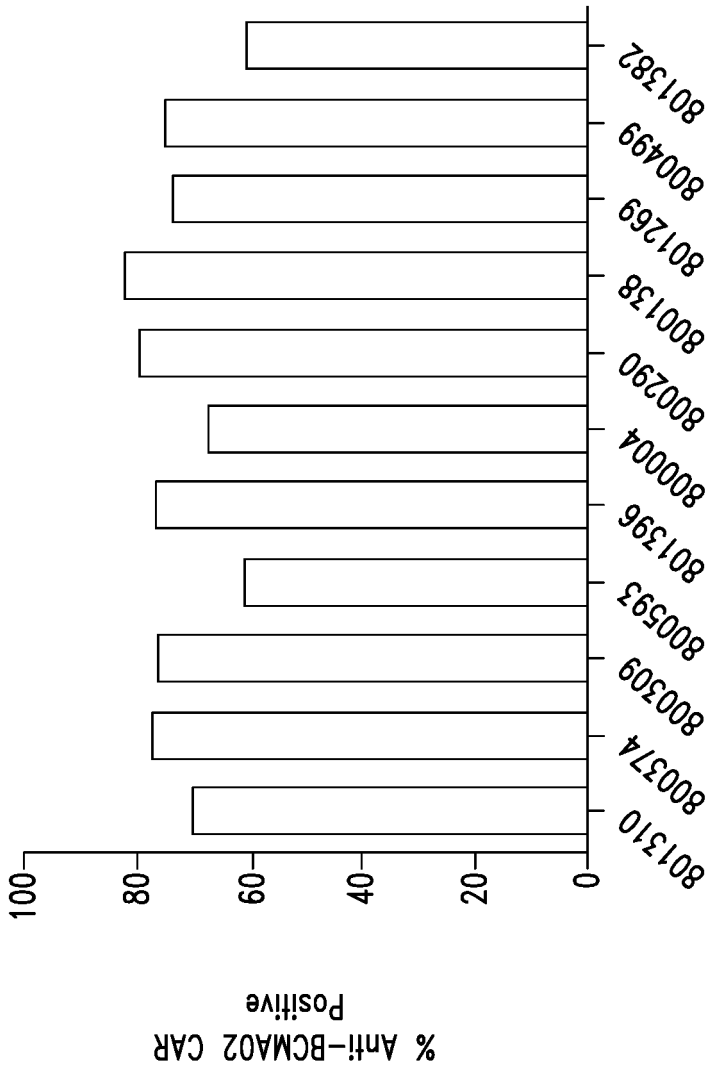

% Anti-BCMA02 CAR Positive
100
80
60
40
20
0
801310
800374
800309
800593
801396
800004
800290
800138
801269
800499
801382

FIG. 12C

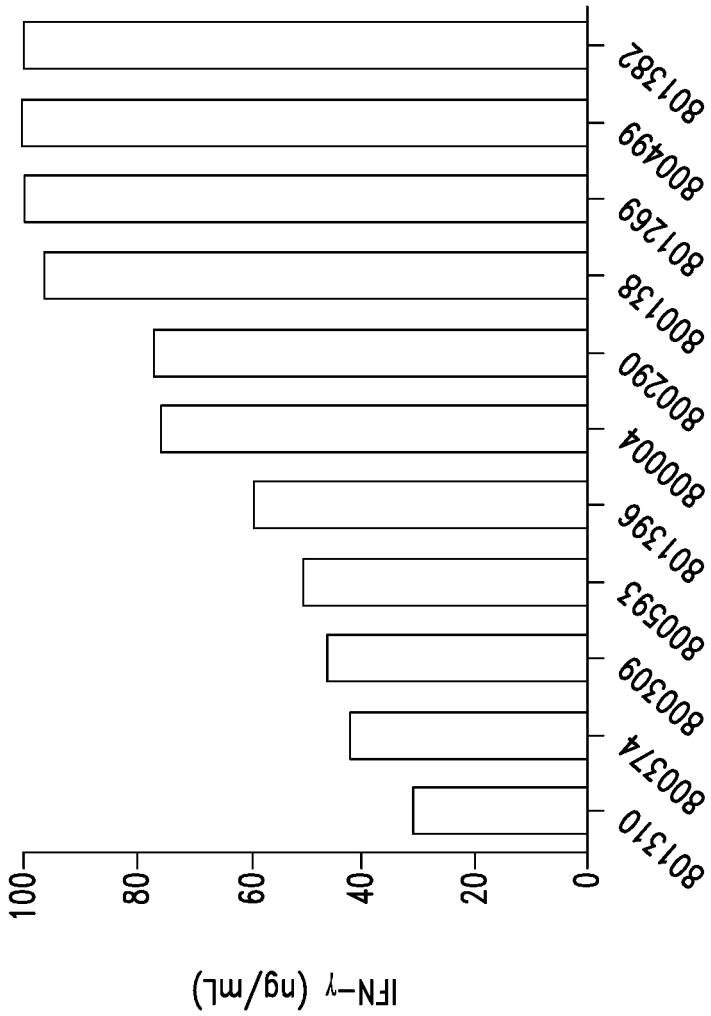

801382
800499
801269
800138
800290
800004
801396
800593
800309
800374
801310
0
20
40
60
80
100
IFN-γ (ng/mL)

FIG. 12D

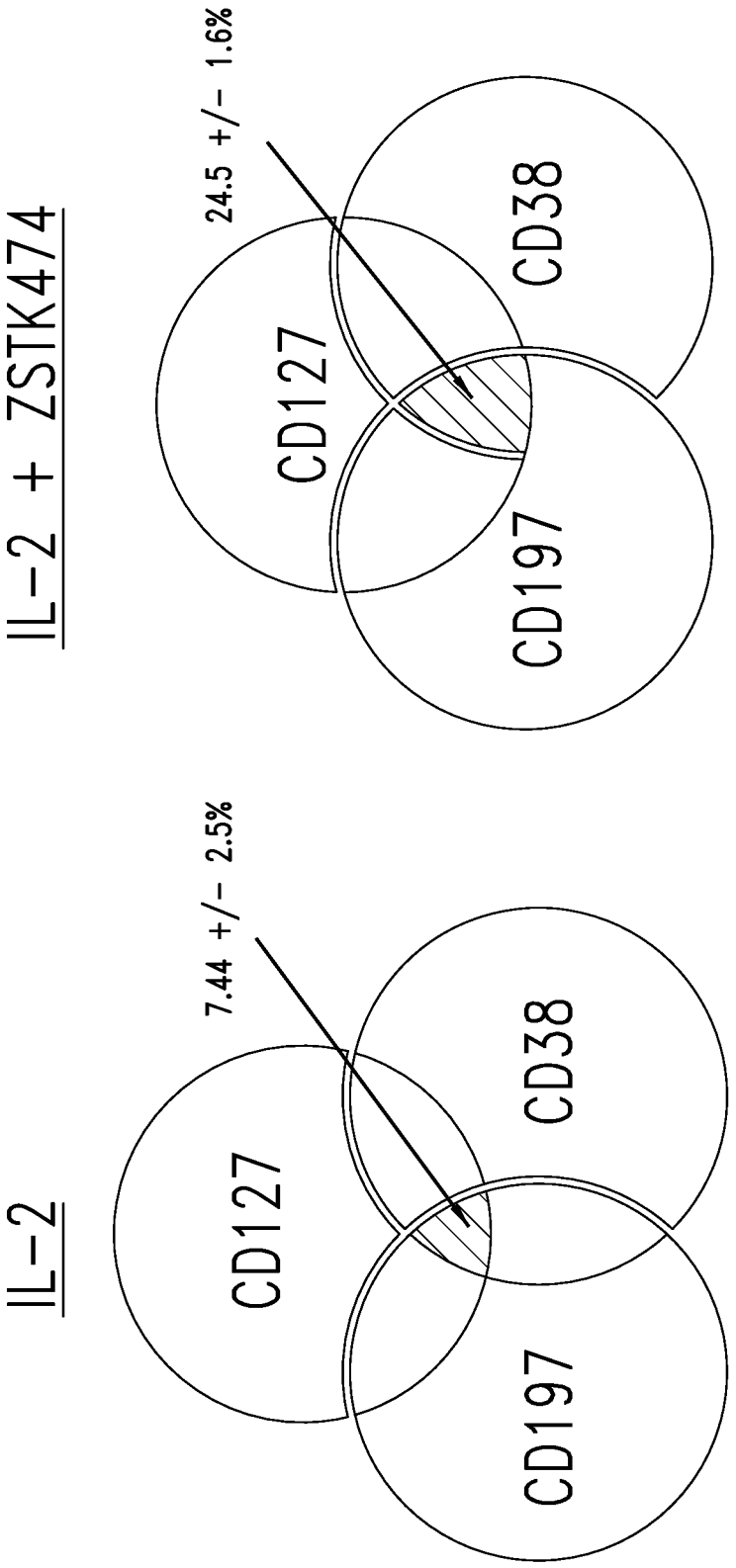

IL-2 + ZSTK474
24.5 +/- 1.6%
CD127
CD38
CD197
IL-2
7.44 +/- 2.5%
CD127
CD38
CD197

FIG. 13

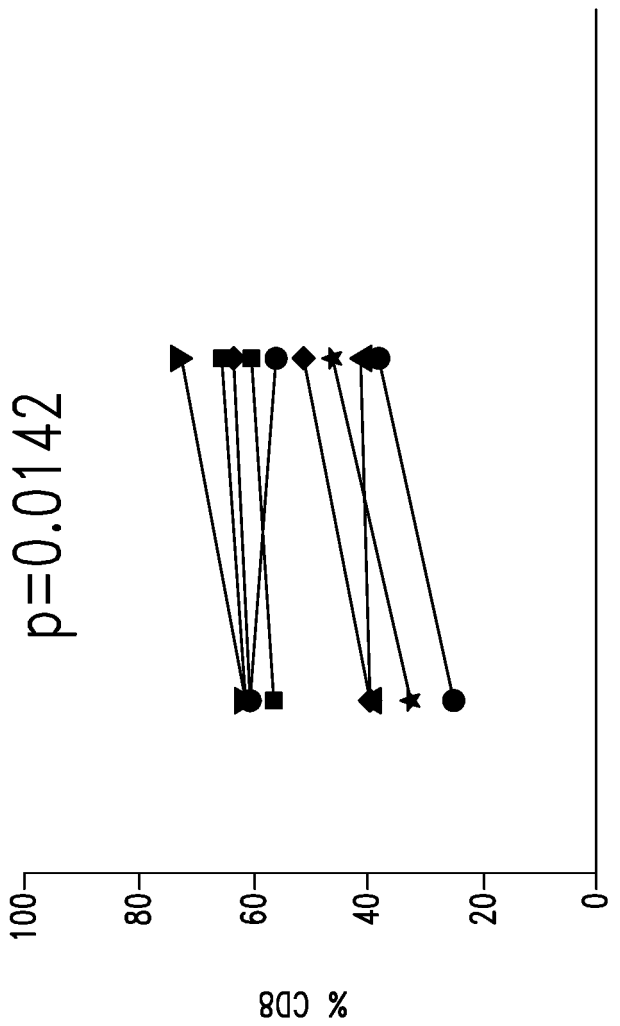


FIG. 14

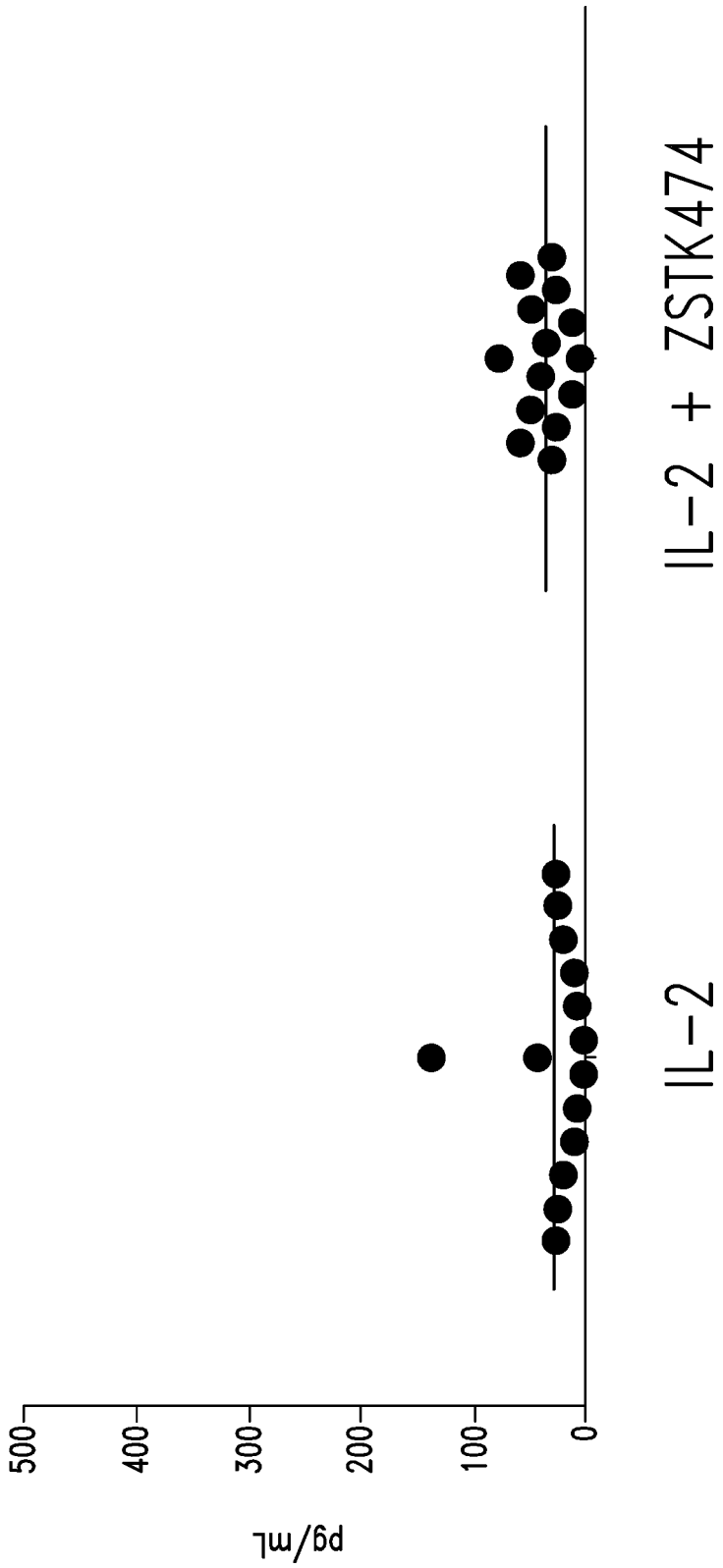


FIG. 15

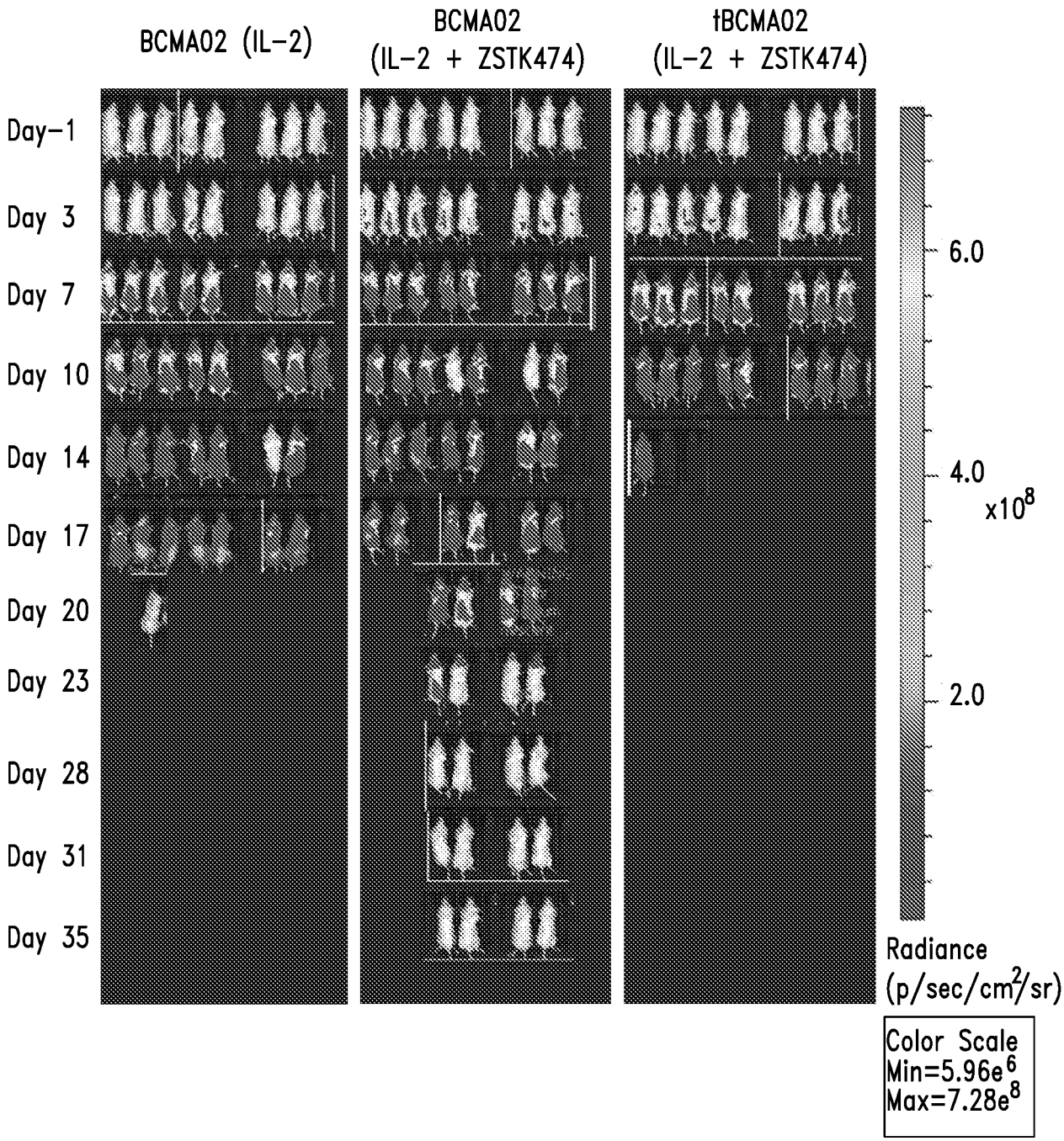

BCMA02 (IL-2)
BCMA02 (IL-2 + ZSTK474)
tBCMA02 (IL-2 + ZSTK474)
Day-1
Day 3
Day 7
Day 10
Day 14
Day 17
Day 20
Day 23
Day 28
Day 31
Day 35
6.0
4.0
x10^8
2.0
Radiance (p/sec/cm^2/sr)
Color Scale
Min=5.96e^6
Max=7.28e^8

FIG. 16

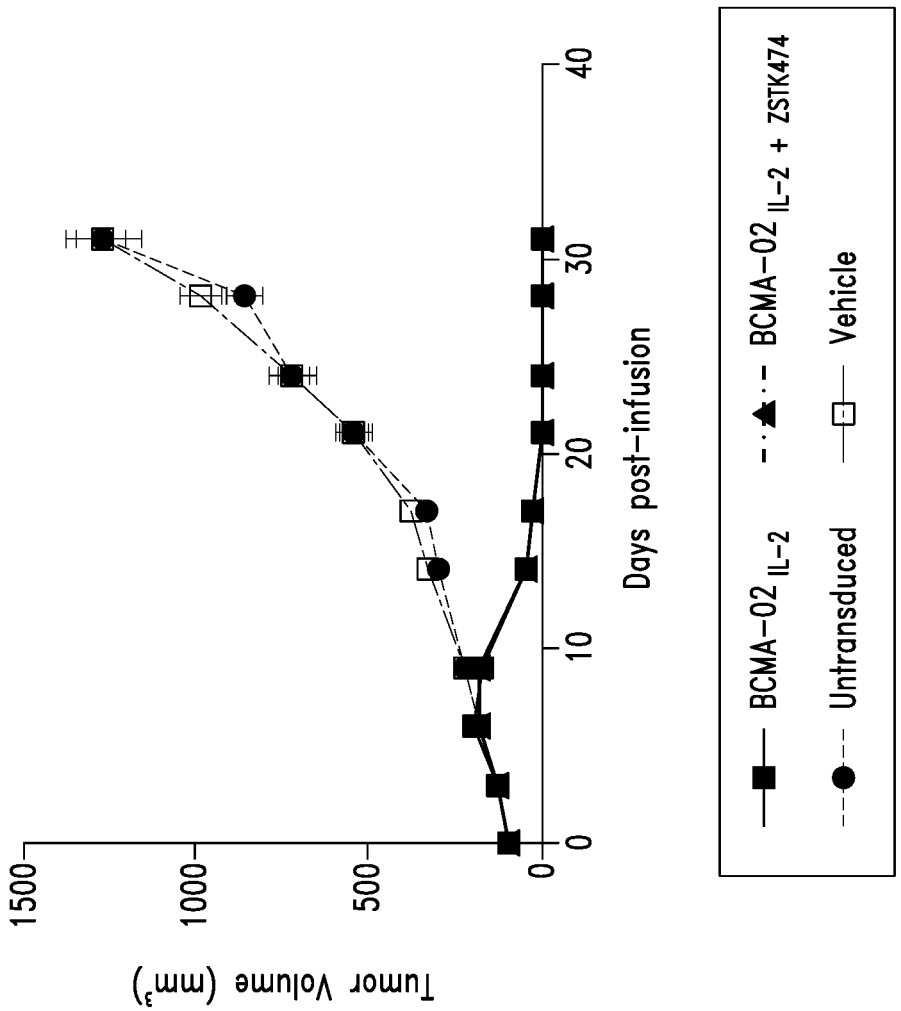

Tumor Volume (mm³)
1500
1000
500
0
0
10
20
30
40
Days post-infusion
BCMA-02 IL-2
BCMA-02 IL-2 + ZSTK474
Untransduced
Vehicle

FIG. 17