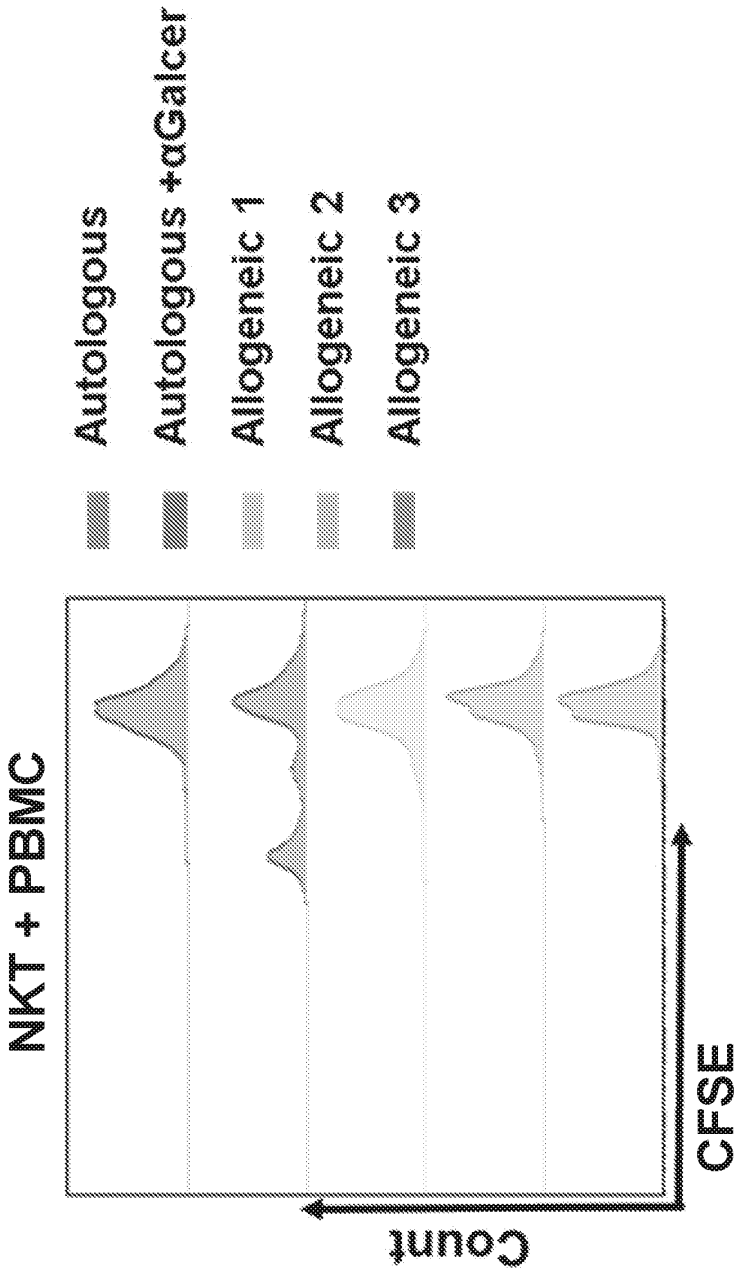
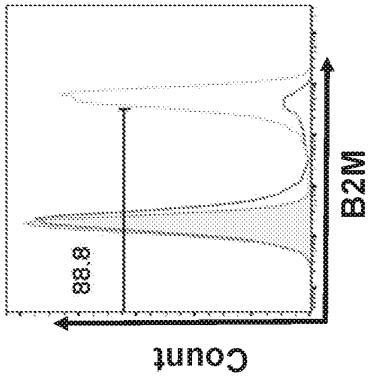

Autologous
Autologous +αGalcer
Allogeneic 1
Allogeneic 2
Allogeneic 3
NKT + PBMC
Count
CFSE

FIG. 1

FIG. 2A



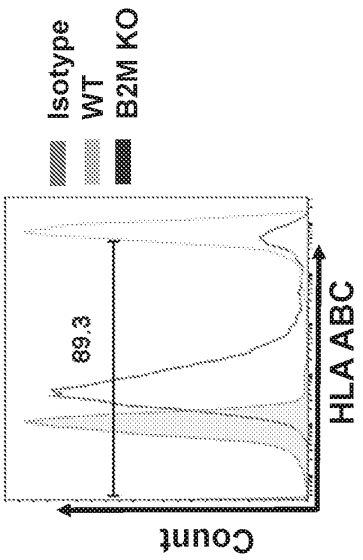
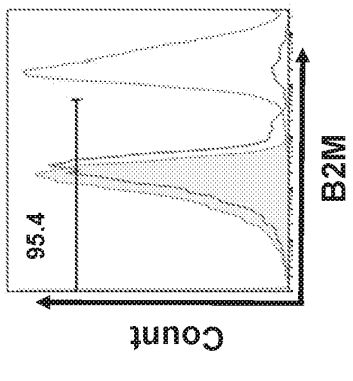


FIG. 2B



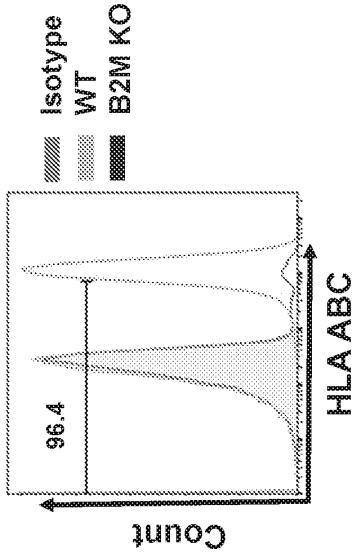
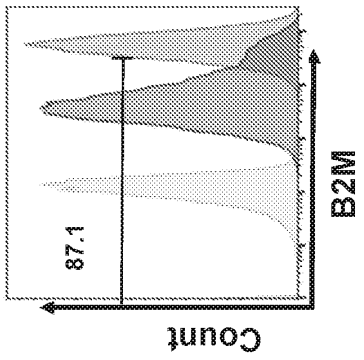


FIG. 2C



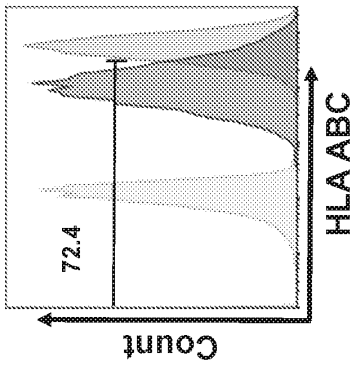


FIG. 3A

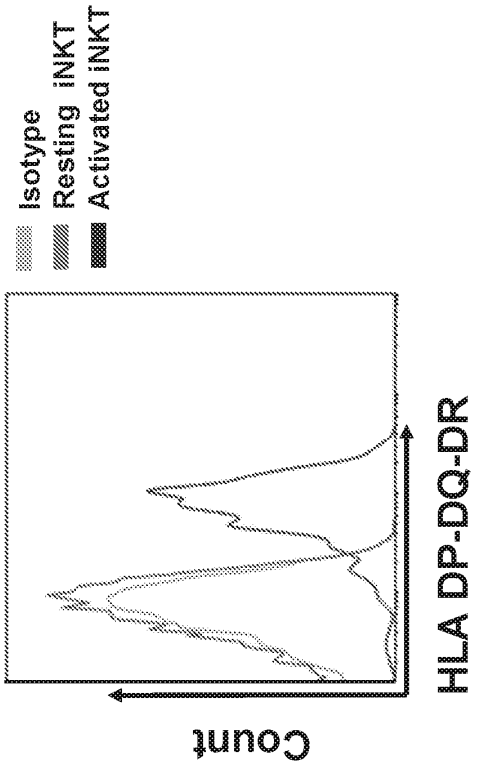
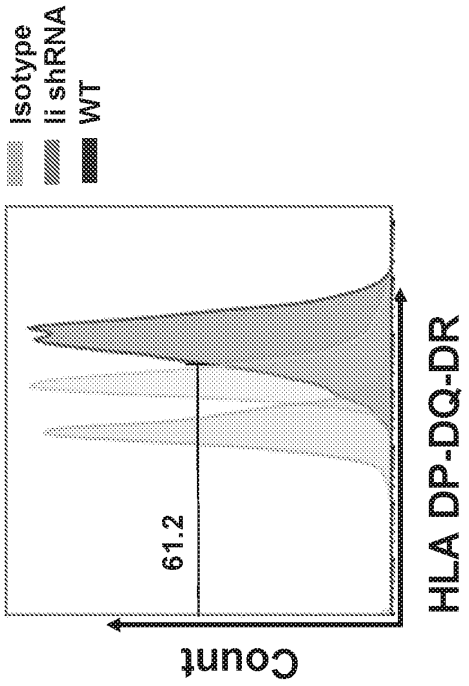

Isotype
Resting iNKT
Activated iNKT
Count
HLA DP-DQ-DR

FIG. 3B


Isotype
Ii shRNA
WT
61.2
Count
HLA DP-DQ-DR

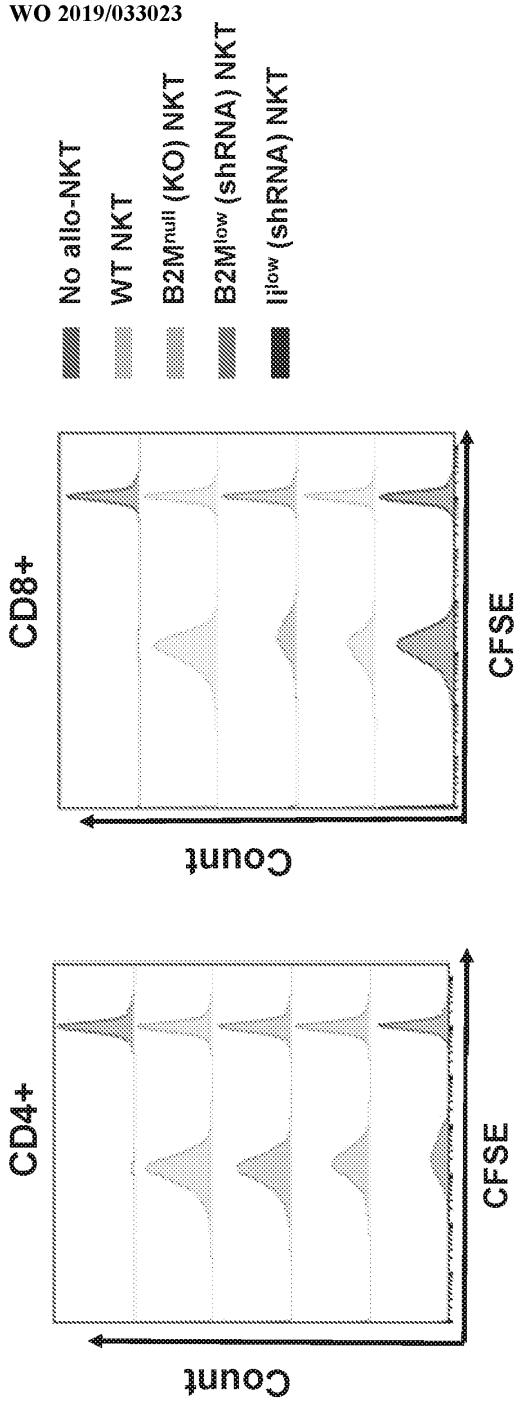

No allo-NKT
WT NKT
B2Mnull (KO) NKT
B2Mlow (shRNA) NKT
Iilow (shRNA) NKT
CD8+
Count
CFSE
CD4+
Count
CFSE

FIG. 4A

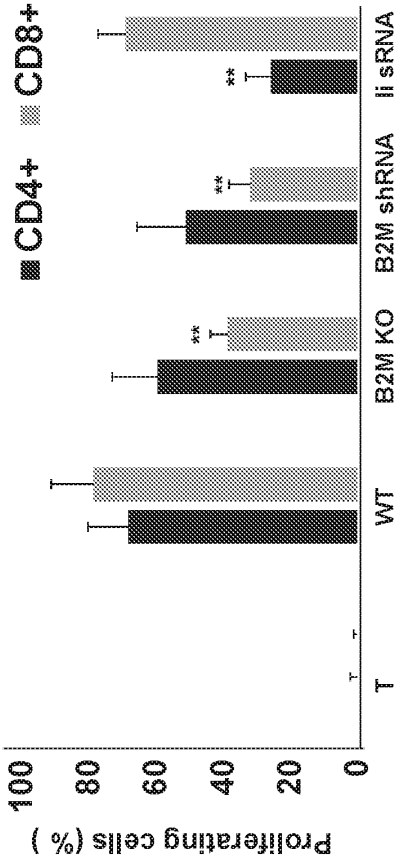

CD4+
CD8+
Proliferating cells (%)
100
80
60
40
20
0
T
WT
B2M KO
B2M shRNA
Ii sRNA
**
**
**

FIG. 4B

FIG. 5A

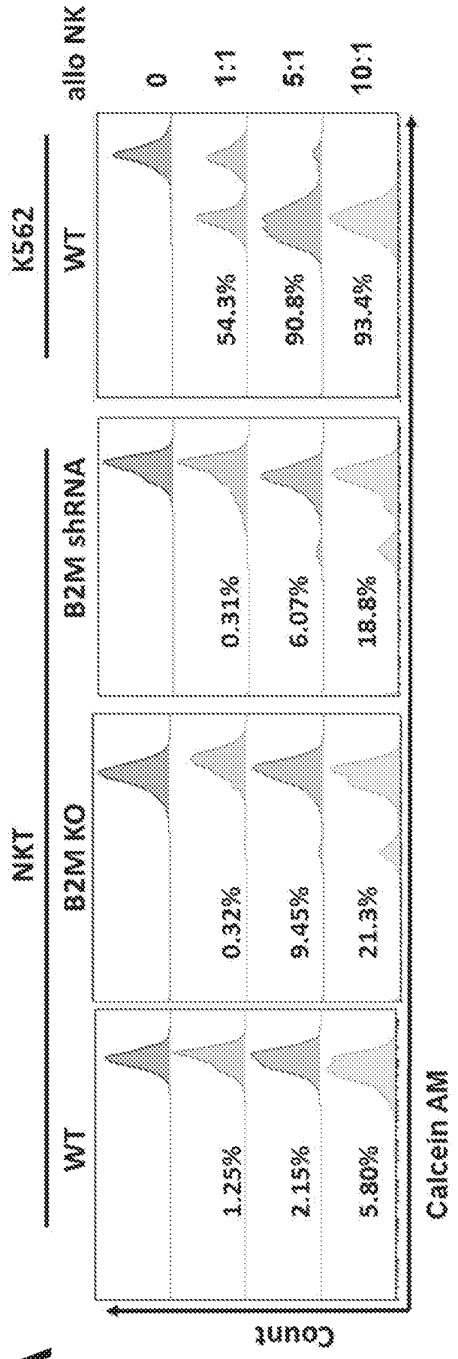
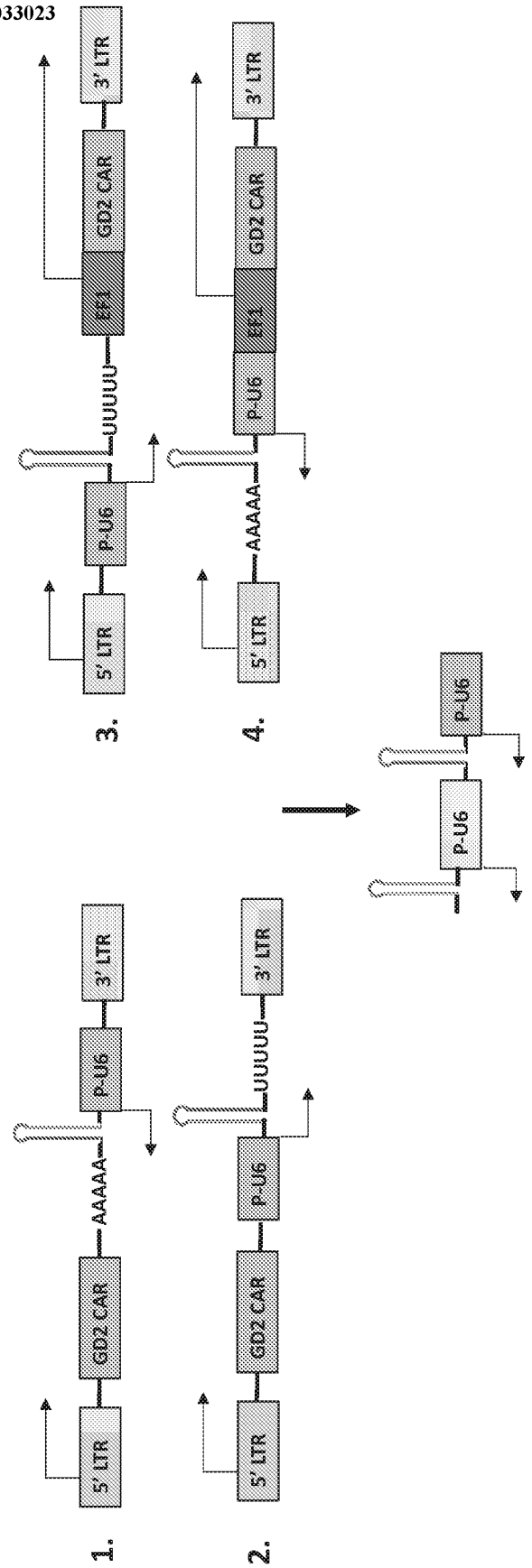

NKT
K562
WT
B2M KO
B2M shRNA
WT
allo NK
0
1:1
5:1
10:1
1.25%
2.15%
5.80%
0.32%
9.45%
21.3%
0.31%
6.07%
18.8%
54.3%
90.8%
93.4%
Count
Calcein AM

FIG. 5B

Effector : target cell ratio
10:1
5:1
1:1
0:1
Percent of specific lysis (%)
120
90
60
30
0
WT
B2M KO
B2M shRNA
K562
*
**
**
*
*
**

FIG. 6A


1.
5' LTR
GD2 CAR
AAAAA
P-U6
3' LTR
2.
5' LTR
GD2 CAR
P-U6
UUUUU
3' LTR
3.
5' LTR
P-U6
UUUUU
EF1
GD2 CAR
3' LTR
4.
5' LTR
AAAAA
P-U6
EF1
GD2 CAR
3' LTR
P-U6
P-U6

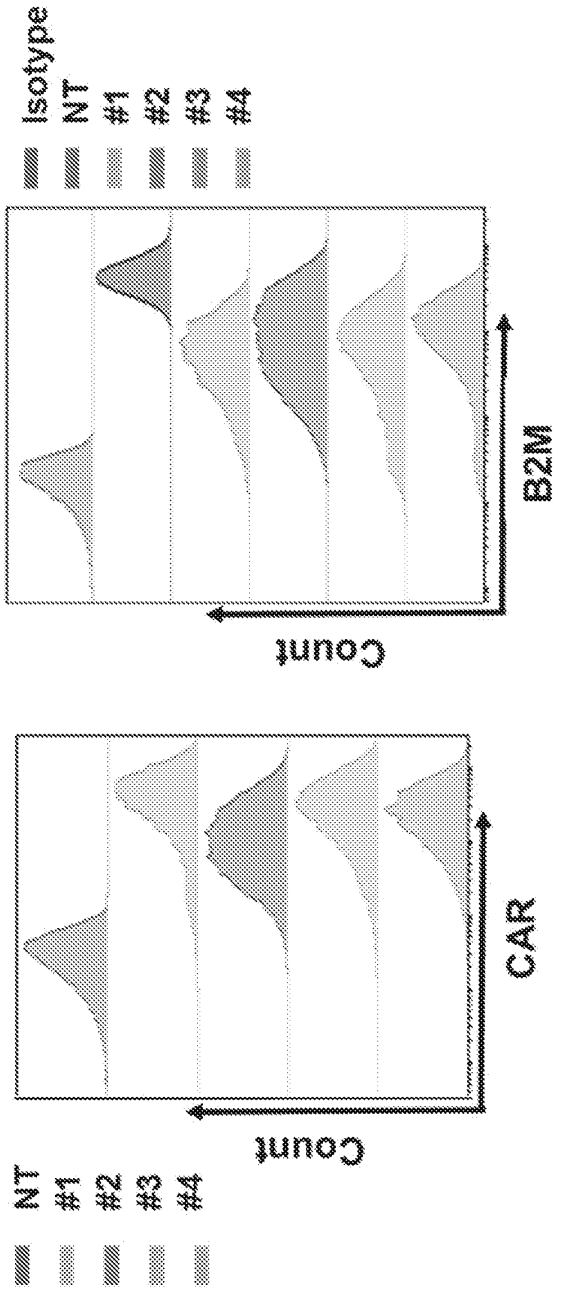


FIG. 6B

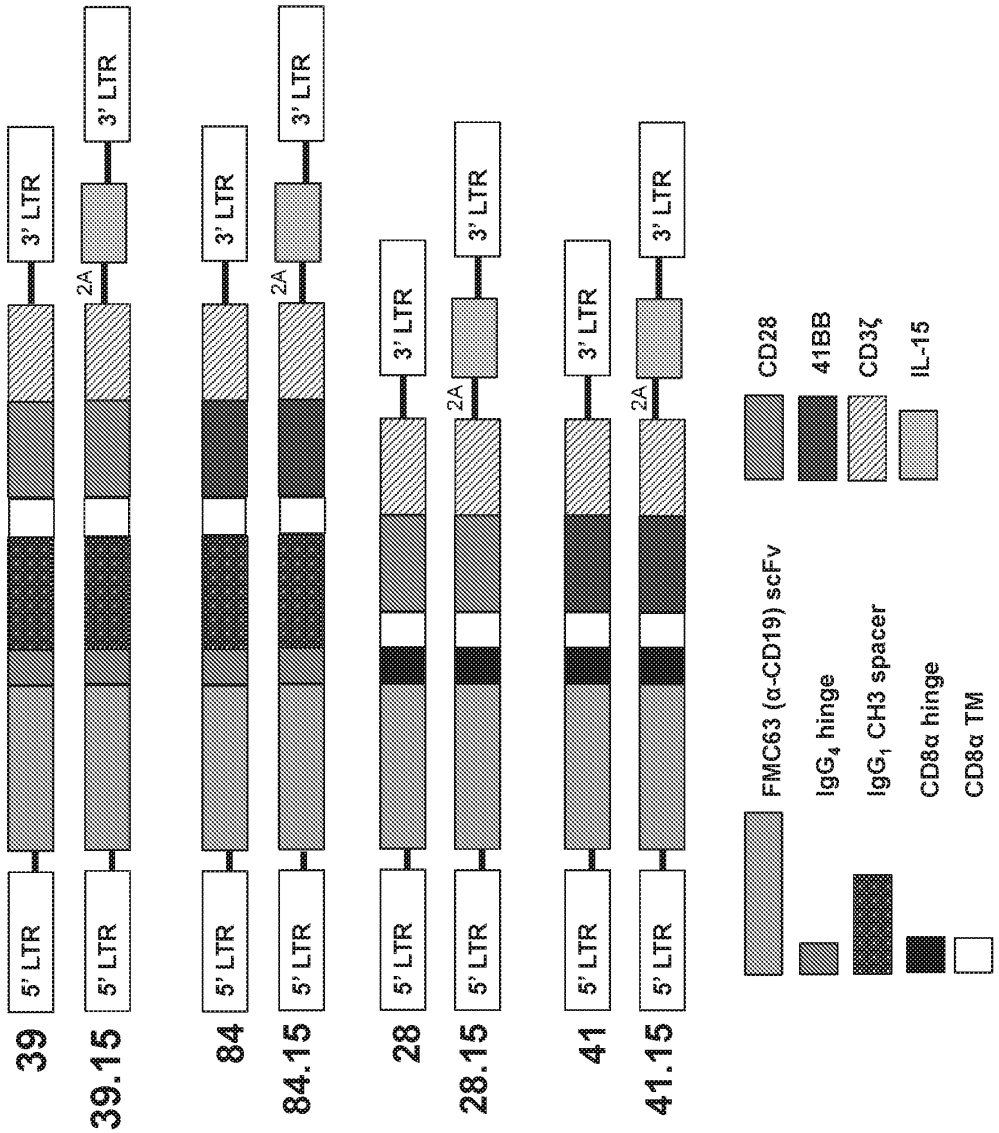
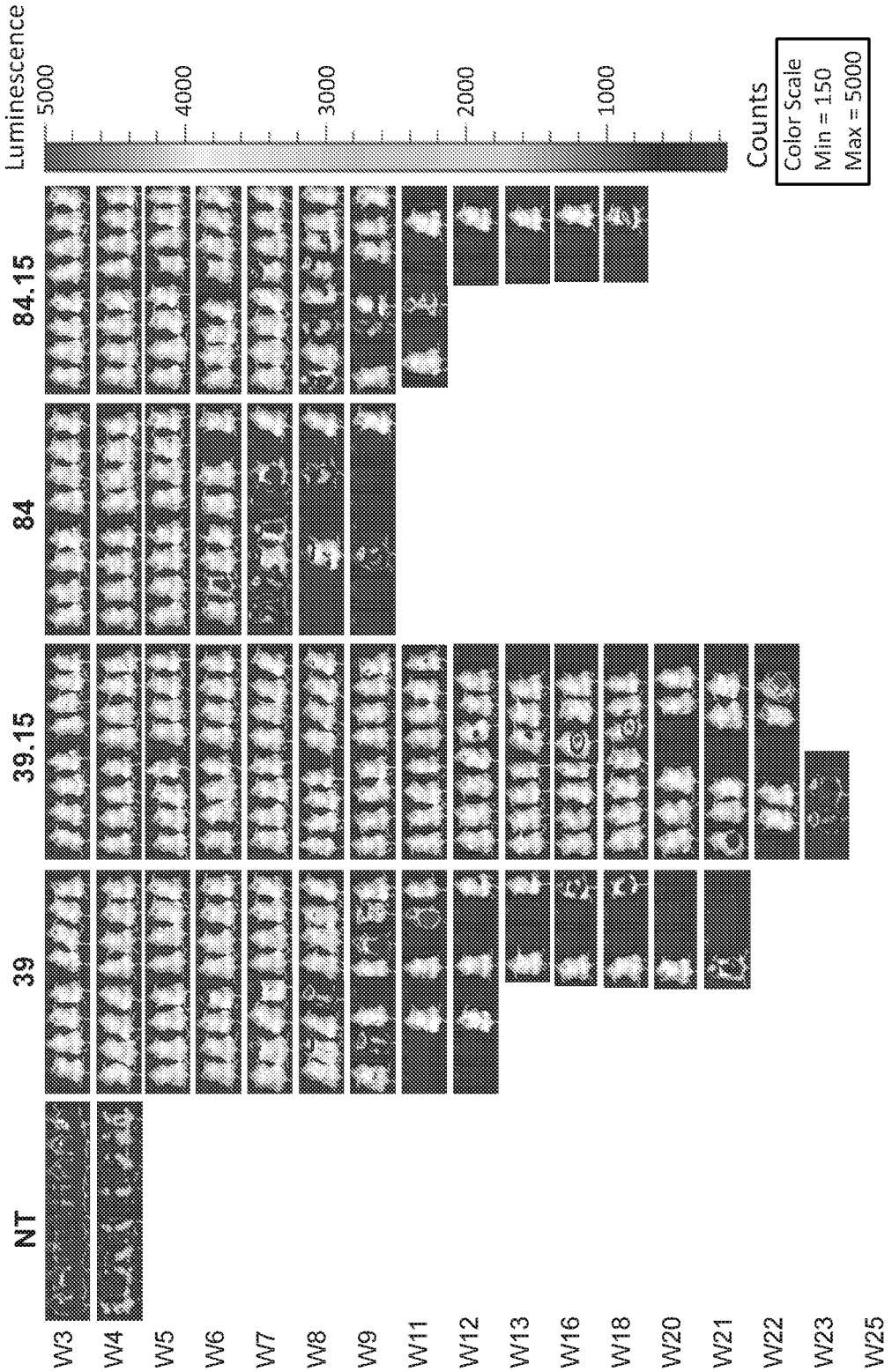

39
39.15
84
84.15
28
28.15
41
41.15
5' LTR
3' LTR
2A
FMC63 (α-CD19) scFv
IgG4 hinge
IgG1 CH3 spacer
CD8α hinge
CD8α TM
CD28
41BB
CD3ζ
IL-15

FIG. 7

FIG. 8A


Luminescence
5000
4000
3000
2000
1000
Counts
Color Scale
Min = 150
Max = 5000
NT
39
39.15
84
84.15
W3
W4
W5
W6
W7
W8
W9
W11
W12
W13
W16
W18
W20
W21
W22
W23
W25

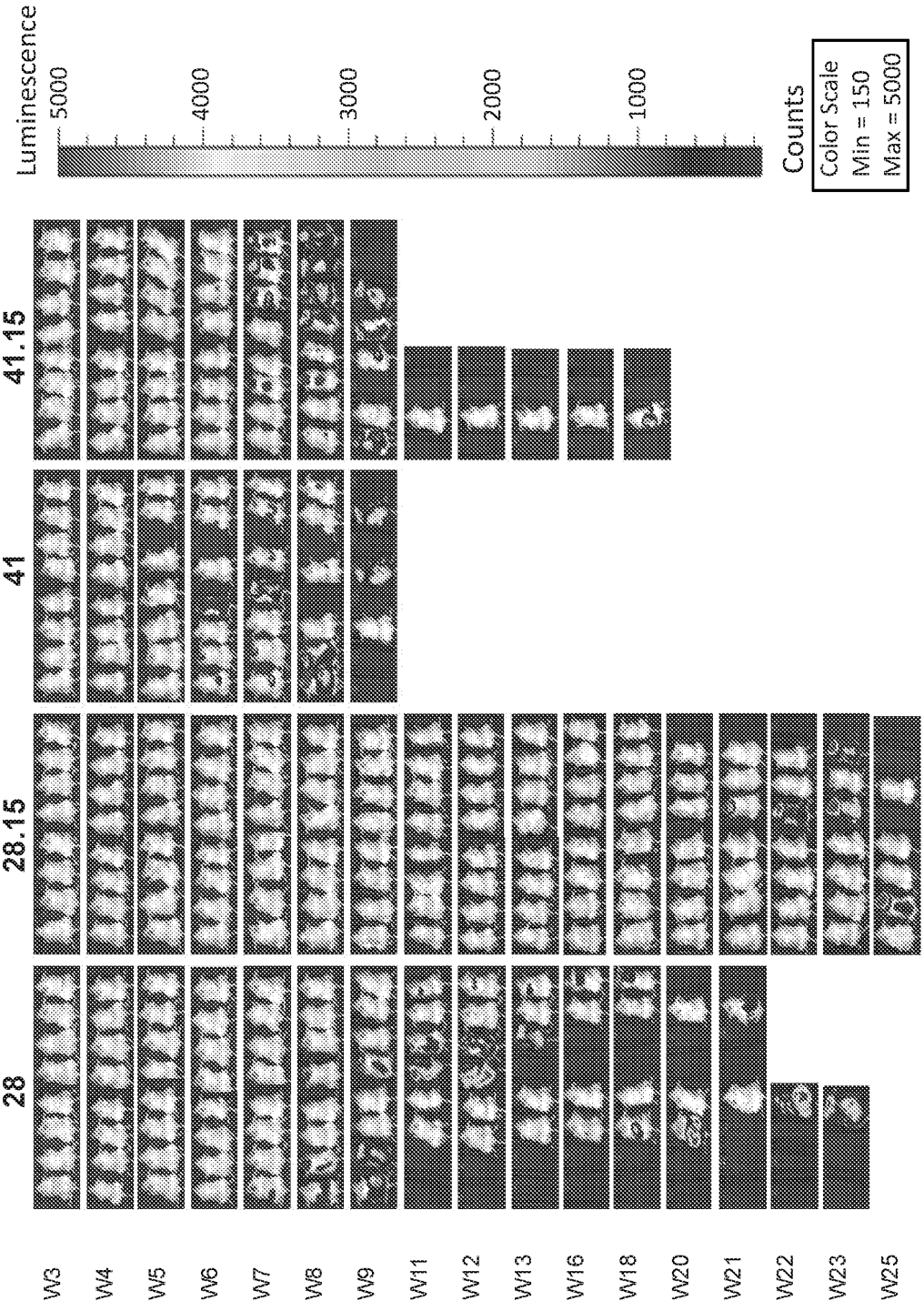

Luminescence
5000
4000
3000
2000
1000
Counts
Color Scale
Min = 150
Max = 5000
28
28.15
41
41.15
W3
W4
W5
W6
W7
W8
W9
W11
W12
W13
W16
W18
W20
W21
W22
W23
W25

FIG. 8B

FIG. 9

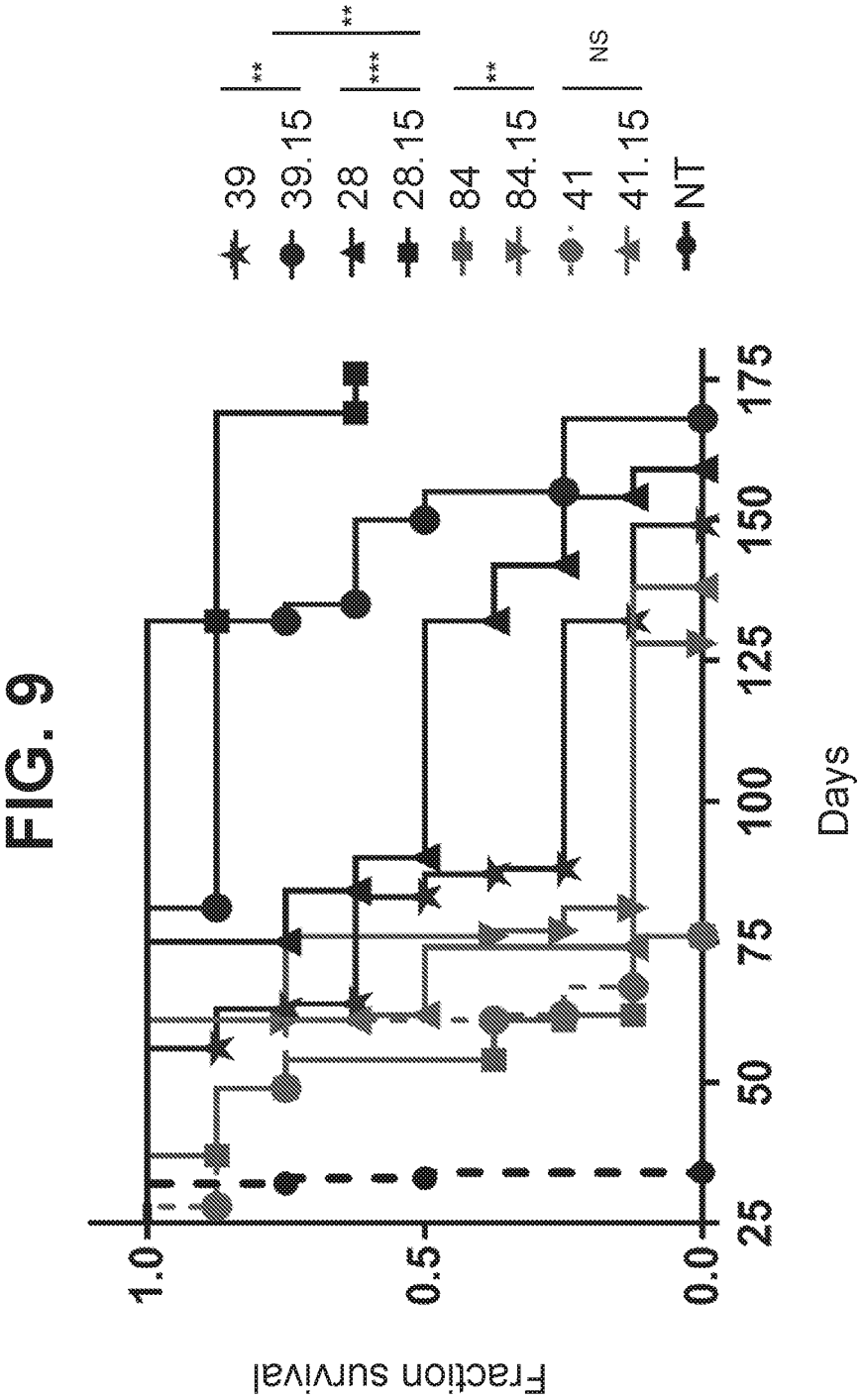

39
39.15
28
28.15
84
84.15
41
41.15
NT
**
***
**
NS
**
Fraction survival
1.0
0.5
0.0
25
50
75
100
125
150
175
Days

FIG. 10

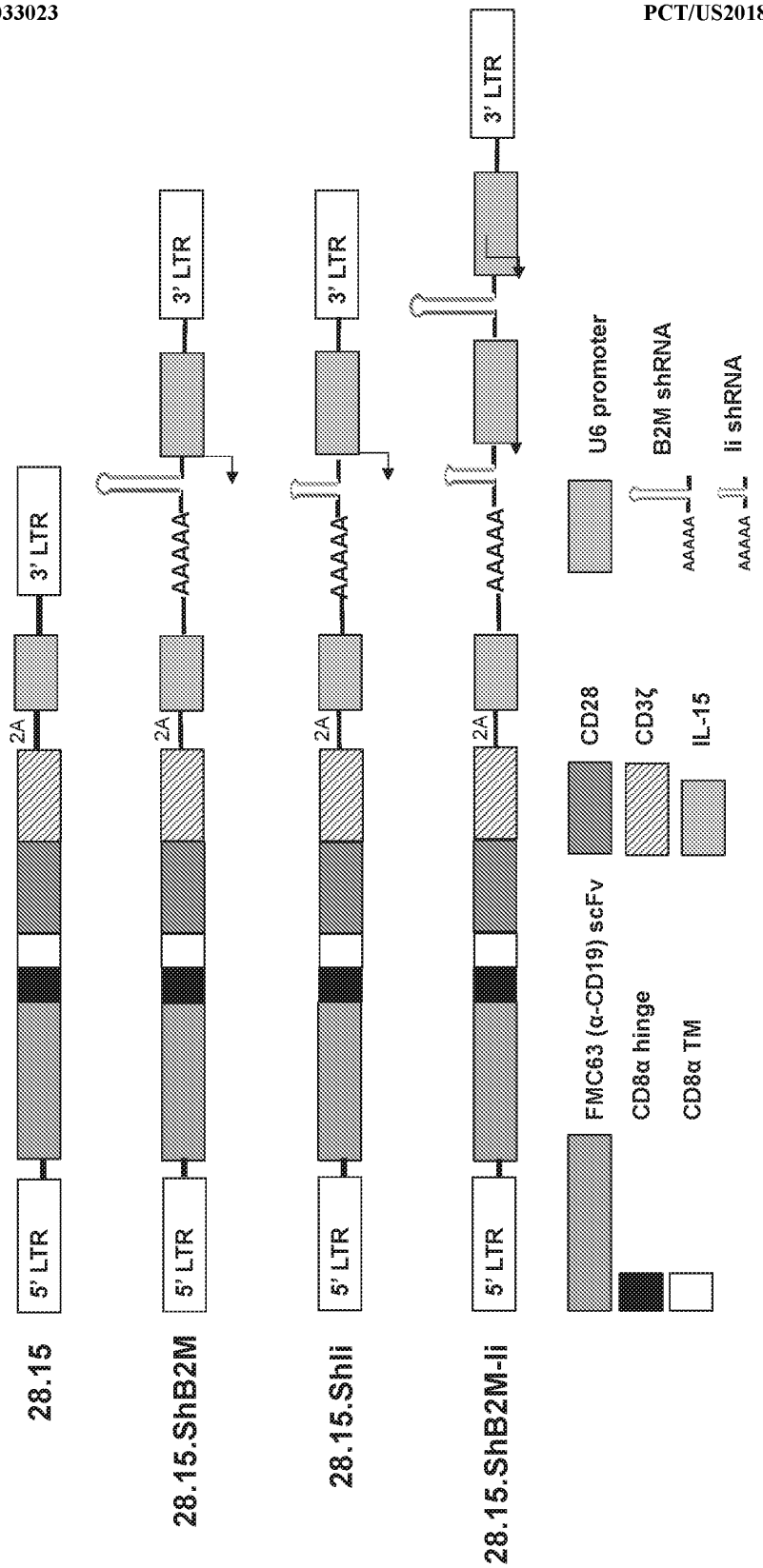

28.15
28.15.ShB2M
28.15.Shli
28.15.ShB2M-li
5' LTR
3' LTR
2A
AAAAA
FMC63 (α-CD19) scFv
CD8α hinge
CD8α TM
CD28
CD3ζ
IL-15
U6 promoter
B2M shRNA
li shRNA

FIG. 11A

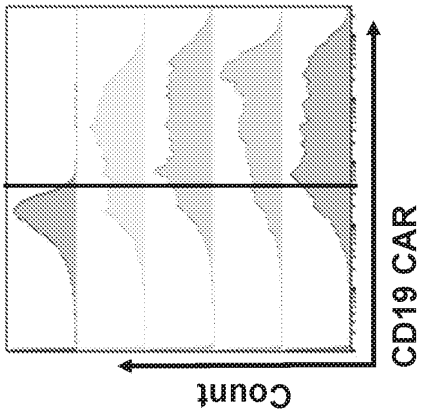


FIG. 11B

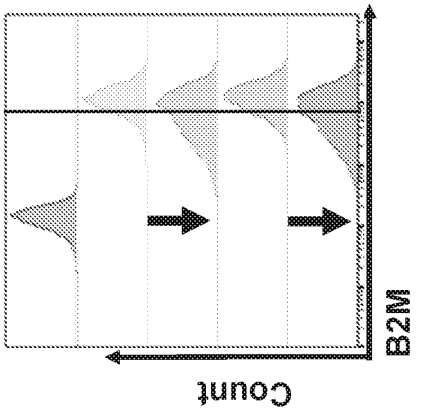


FIG. 11C

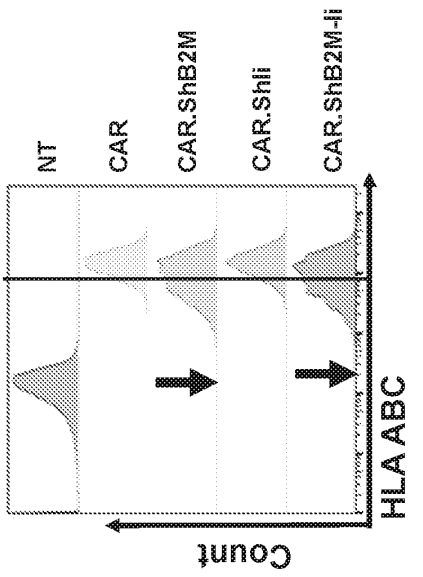


FIG. 11D

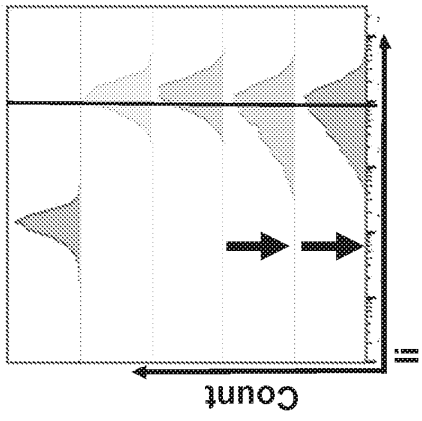


FIG. 11E

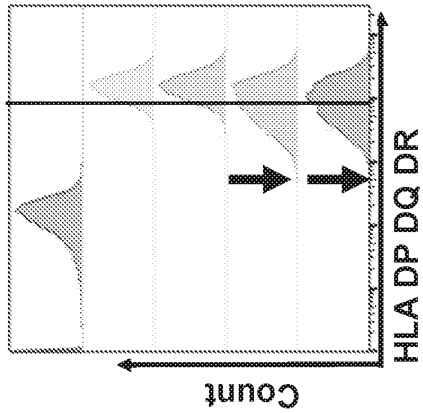
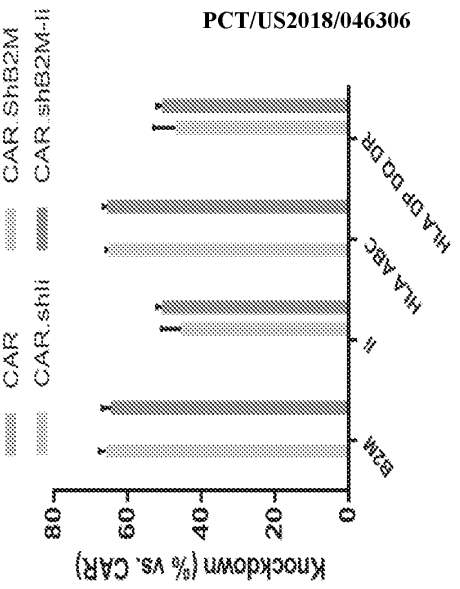


FIG. 11F



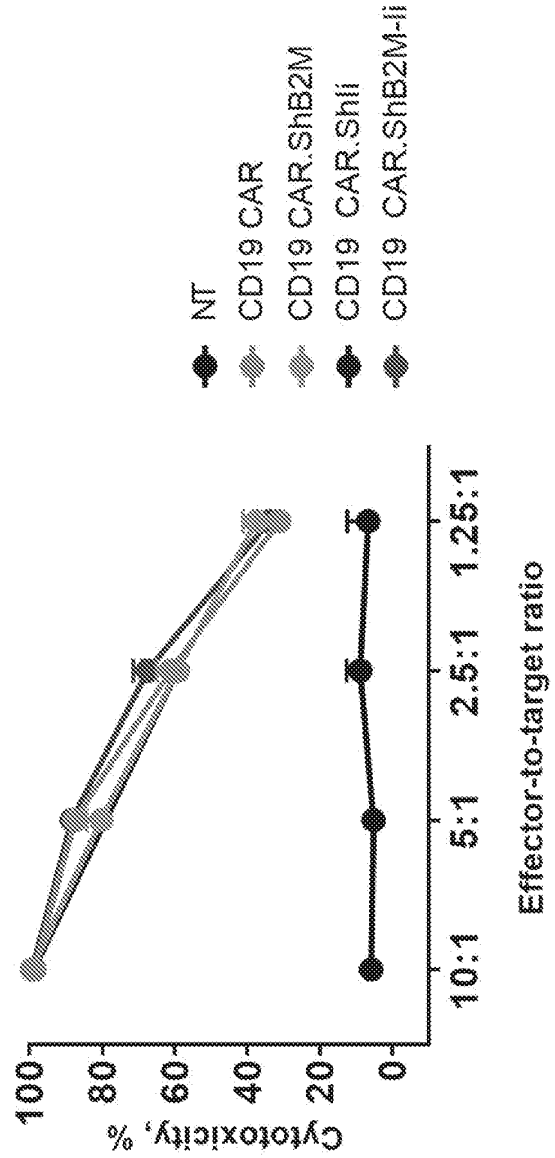

NT
CD19 CAR
CD19 CAR.ShB2M
CD19 CAR.Shli
CD19 CAR.ShB2M-li
Cytotoxicity, %
100
80
60
40
20
0
10:1
5:1
2.5:1
1.25:1
Effector-to-target ratio

FIG. 12

FIG. 13A

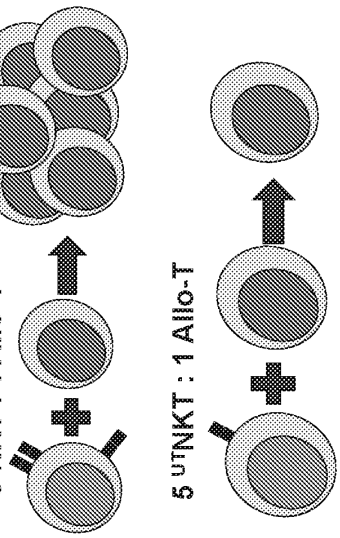


FIG. 13B

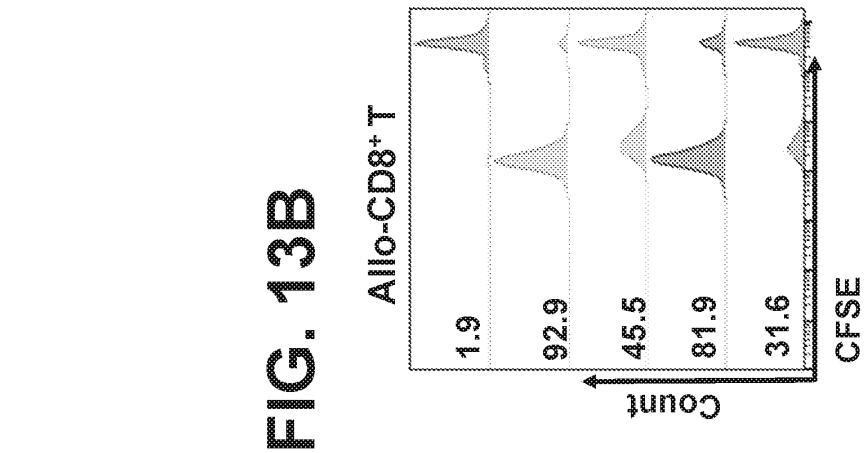


FIG. 13C

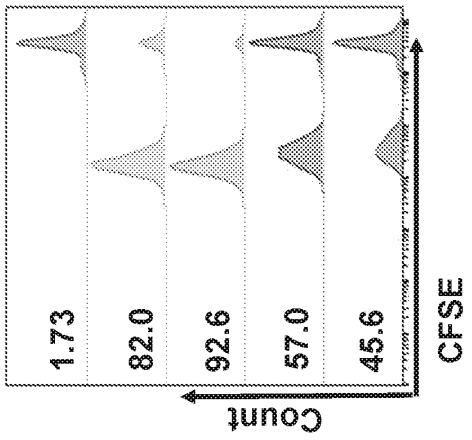


FIG. 14A

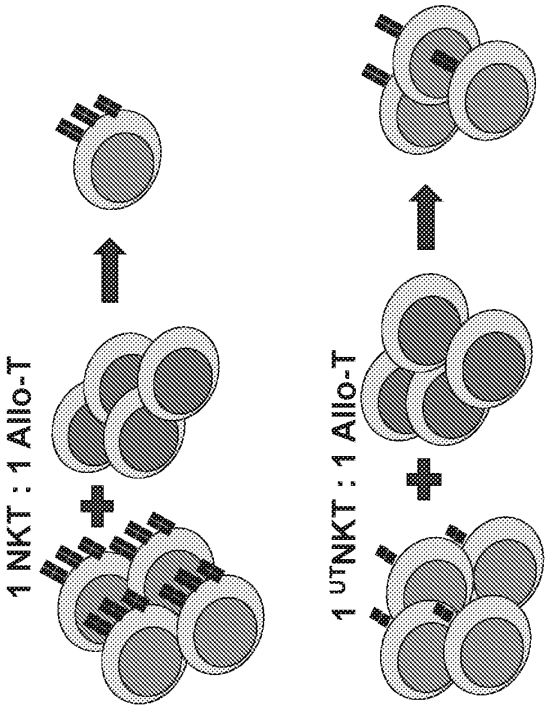


FIG. 14B

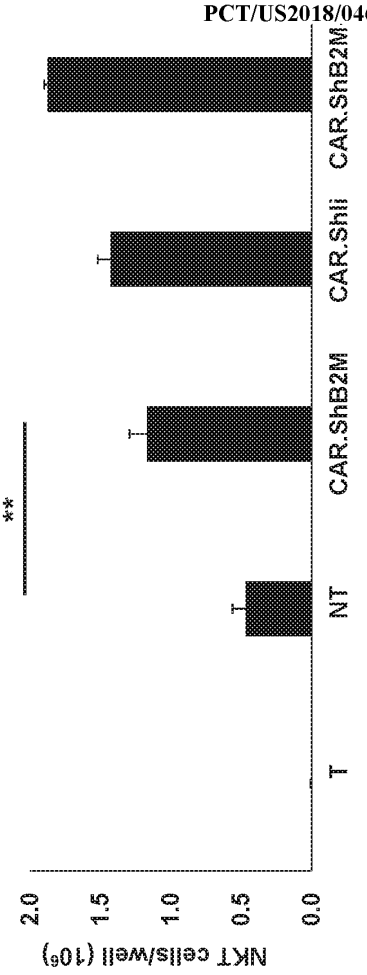


FIG. 15B

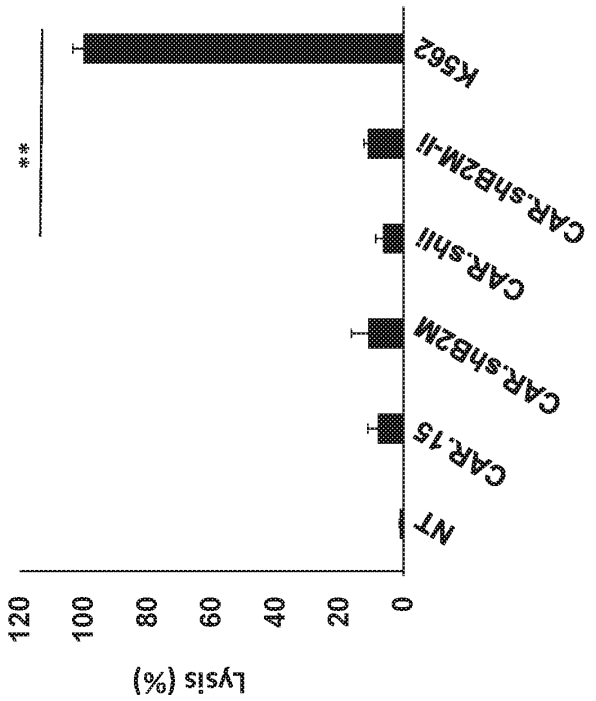


FIG. 15A

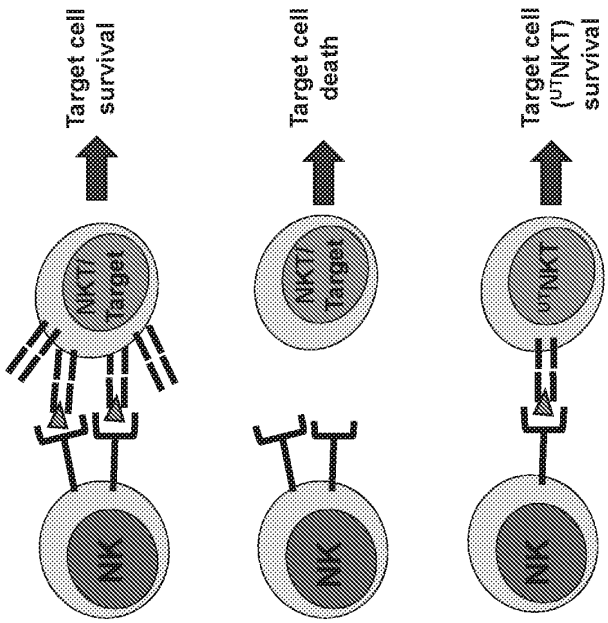


FIG. 16A

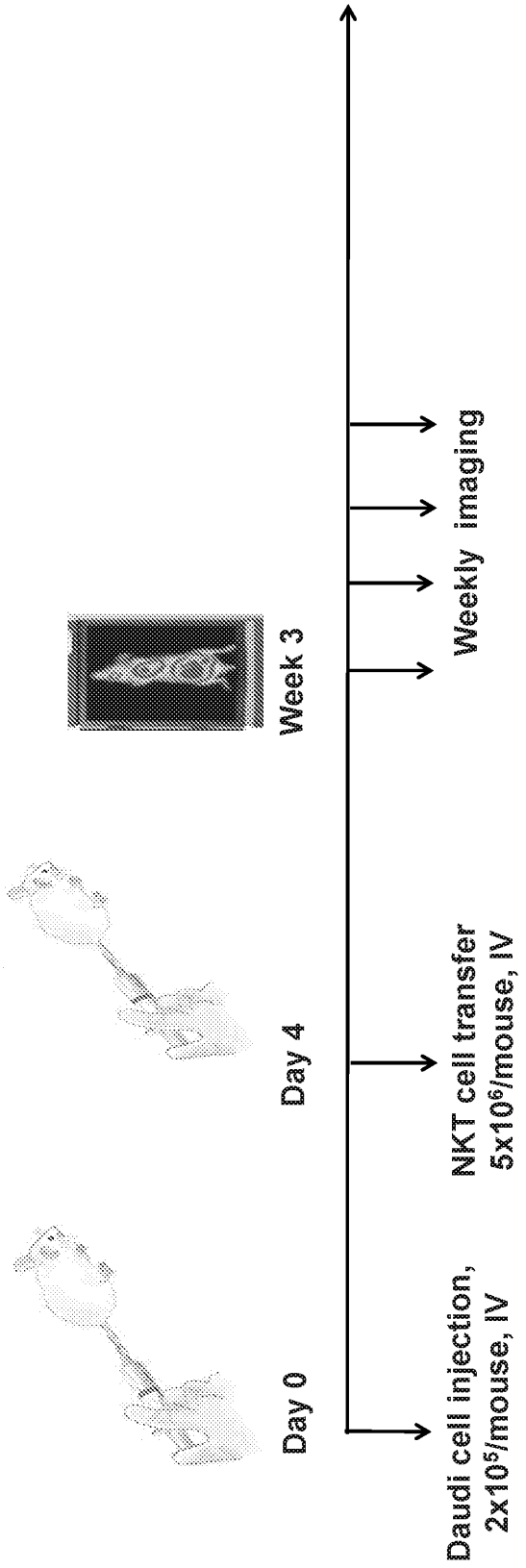

Daudi cell injection,
2x10^5/mouse, IV
Day 0
NKT cell transfer
5x10^6/mouse, IV
Day 4
Week 3
Weekly imaging

FIG. 16B

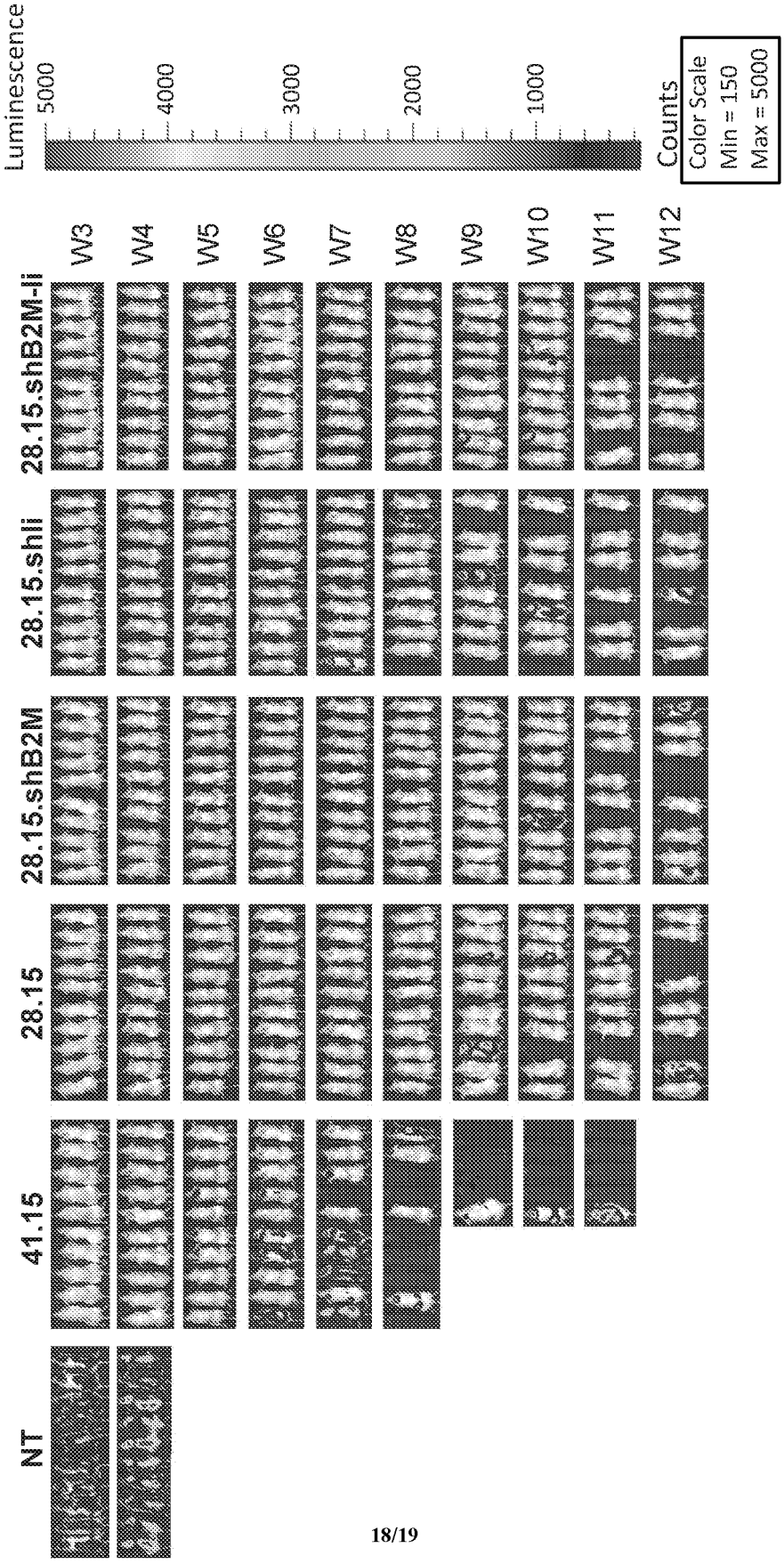
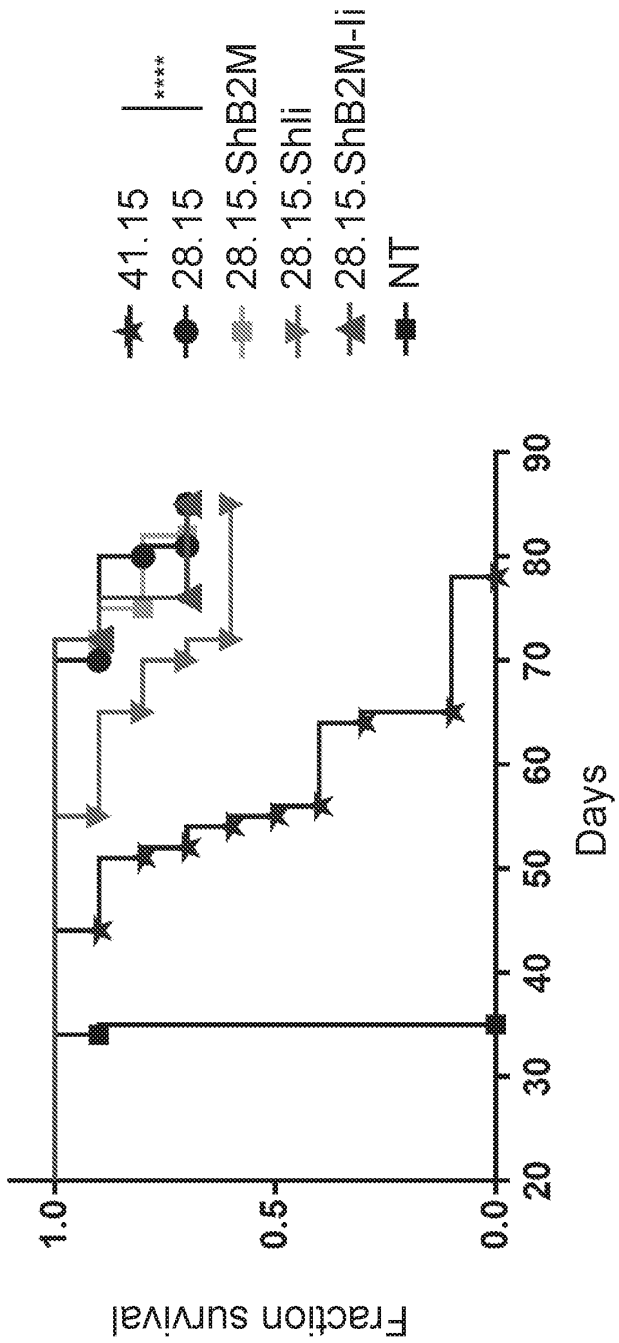

Luminescence
5000
4000
3000
2000
1000
Counts
Color Scale
Min = 150
Max = 5000
NT
41.15
28.15
28.15.shB2M
28.15.shli
28.15.shB2M-li
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12

FIG. 17


41.15
28.15
28.15.ShB2M
28.15.Shli
28.15.ShB2M-li
NT
****
Fraction survival
1.0
0.5
0.0
20
30
40
50
60
70
80
90
Days