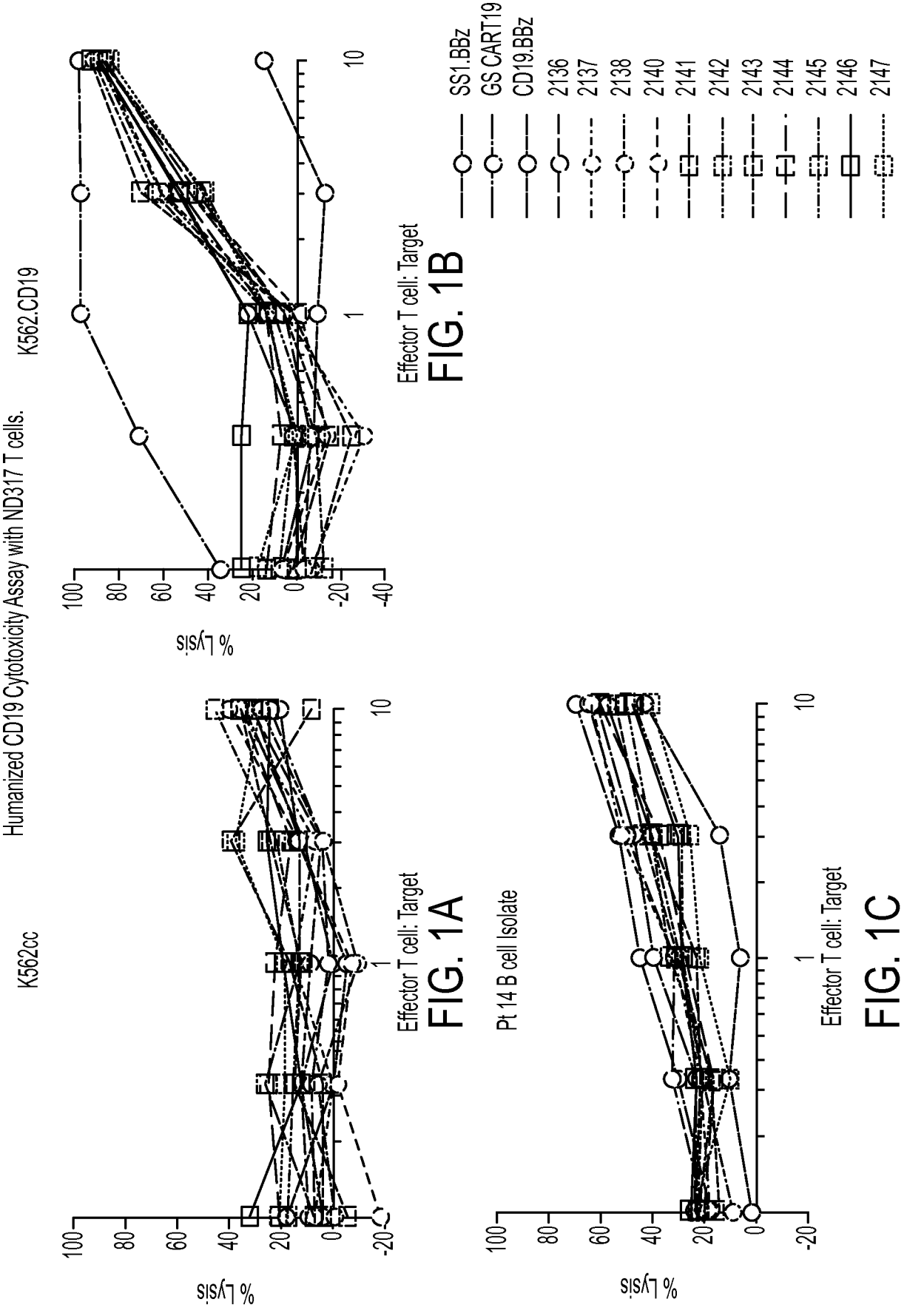



FIG. 1A

FIG. 1B

FIG. 1C

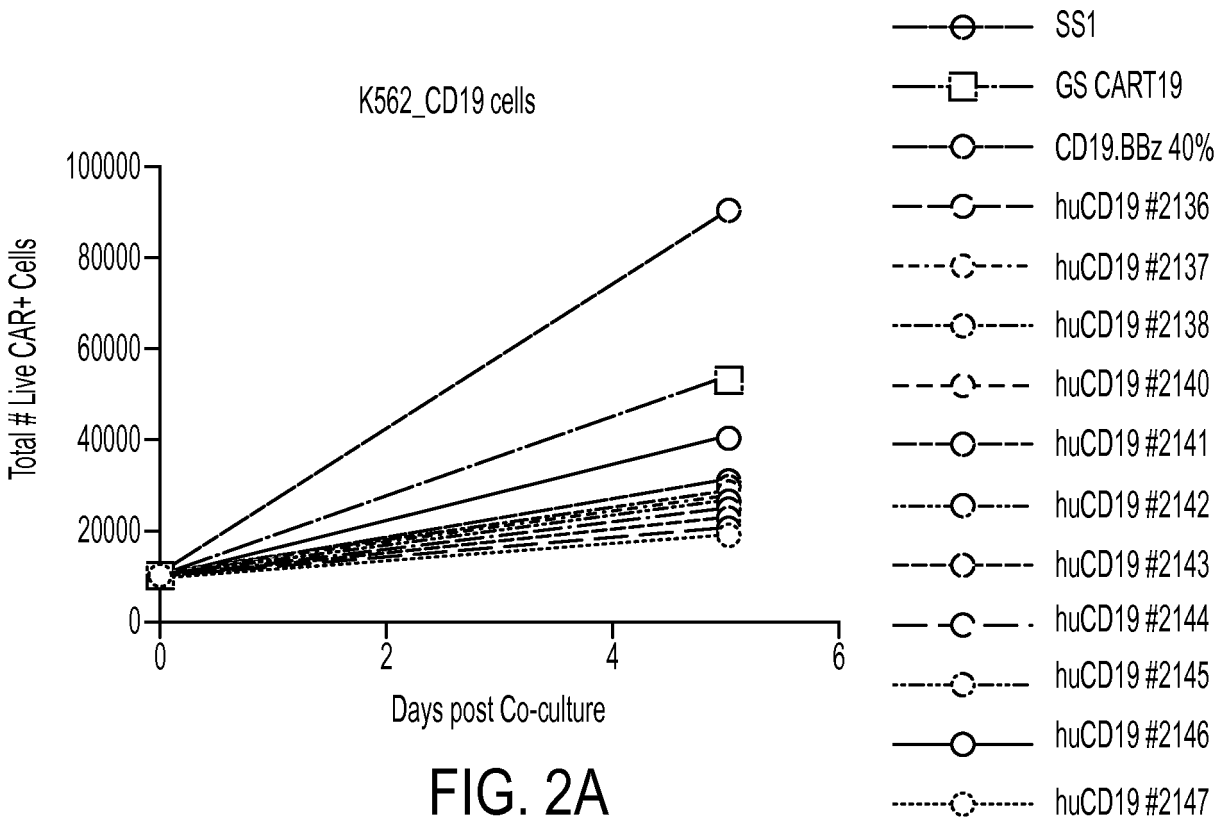

K562_CD19 cells
Total # Live CAR+ Cells
100000
80000
60000
40000
20000
0
0
2
4
6
Days post Co-culture
SS1
GS CART19
CD19.BBz 40%
huCD19 #2136
huCD19 #2137
huCD19 #2138
huCD19 #2140
huCD19 #2141
huCD19 #2142
huCD19 #2143
huCD19 #2144
huCD19 #2145
huCD19 #2146
huCD19 #2147

FIG. 2A

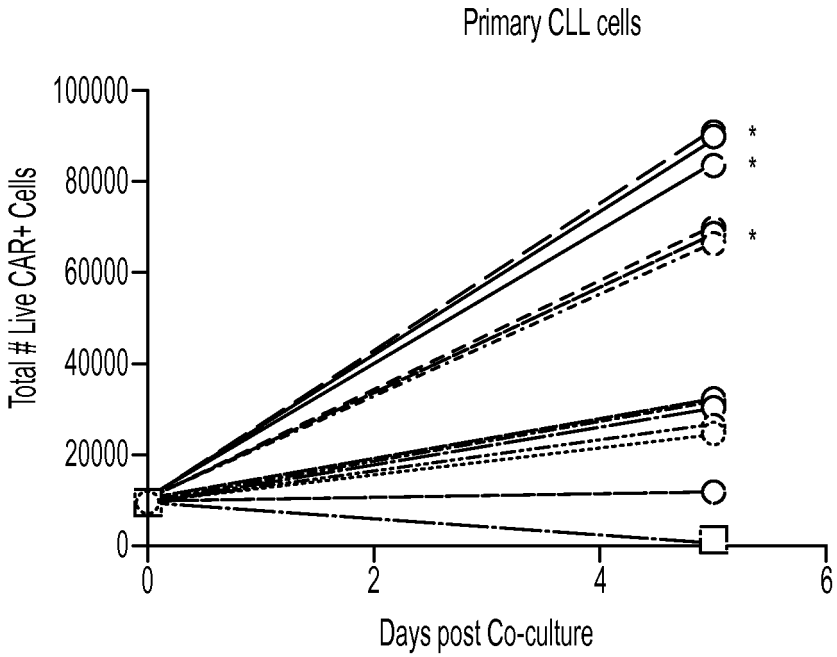

Primary CLL cells
Total # Live CAR+ Cells
100000
80000
60000
40000
20000
0
0
2
4
6
Days post Co-culture
*
*
*

FIG. 2B

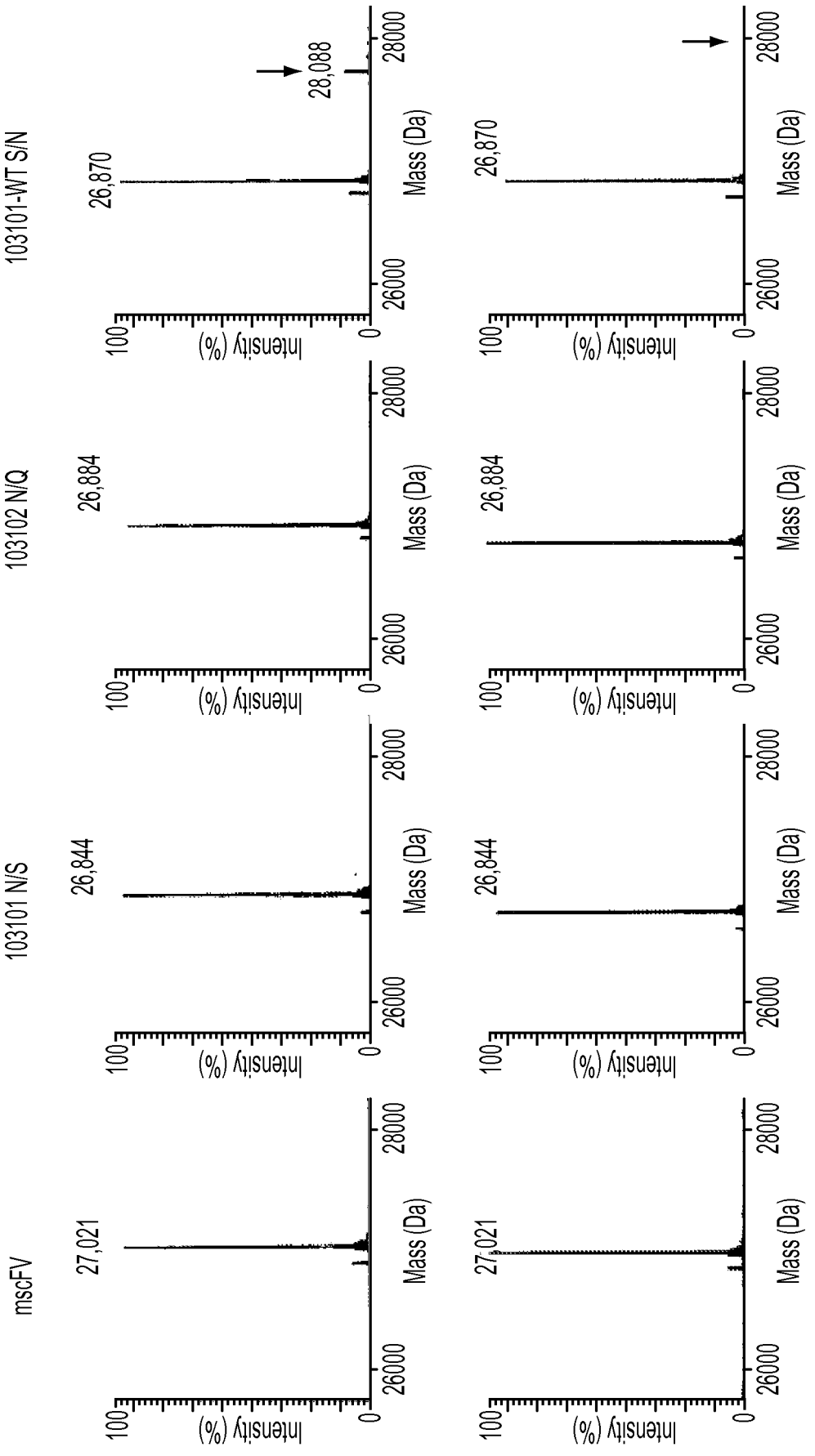

mscFV
103101 N/S
103102 N/Q
103101-WT S/N
27,021
26,844
26,884
26,870
28,088
Intensity (%)
Mass (Da)
100
0
26000
28000

FIG. 3

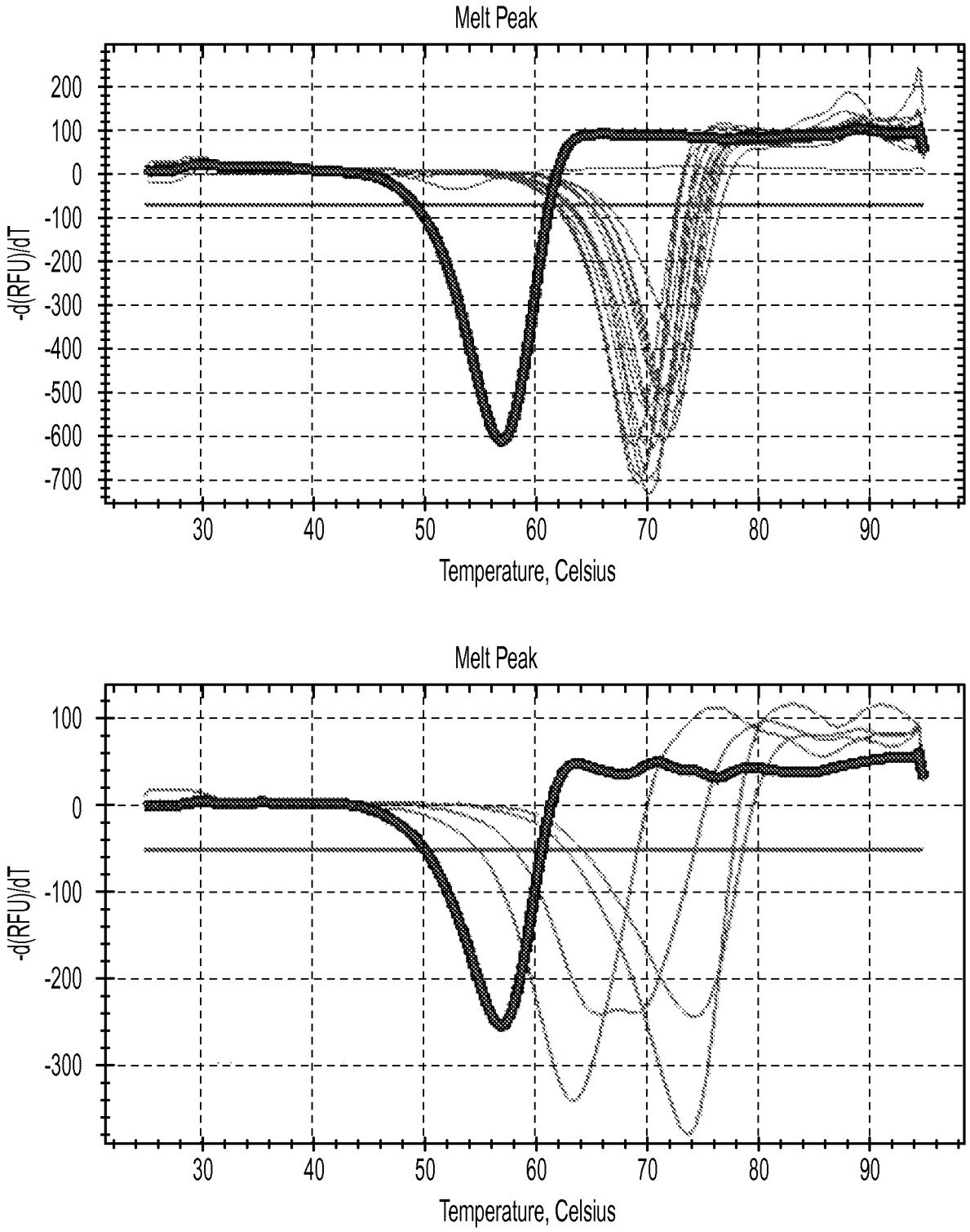

Melt Peak
200
100
0
-100
-200
-300
-400
-500
-600
-700
-d(RFU)/dT
30
40
50
60
70
80
90
Temperature, Celsius
Melt Peak
100
0
-100
-200
-300
-d(RFU)/dT
30
40
50
60
70
80
90
Temperature, Celsius

FIG. 4

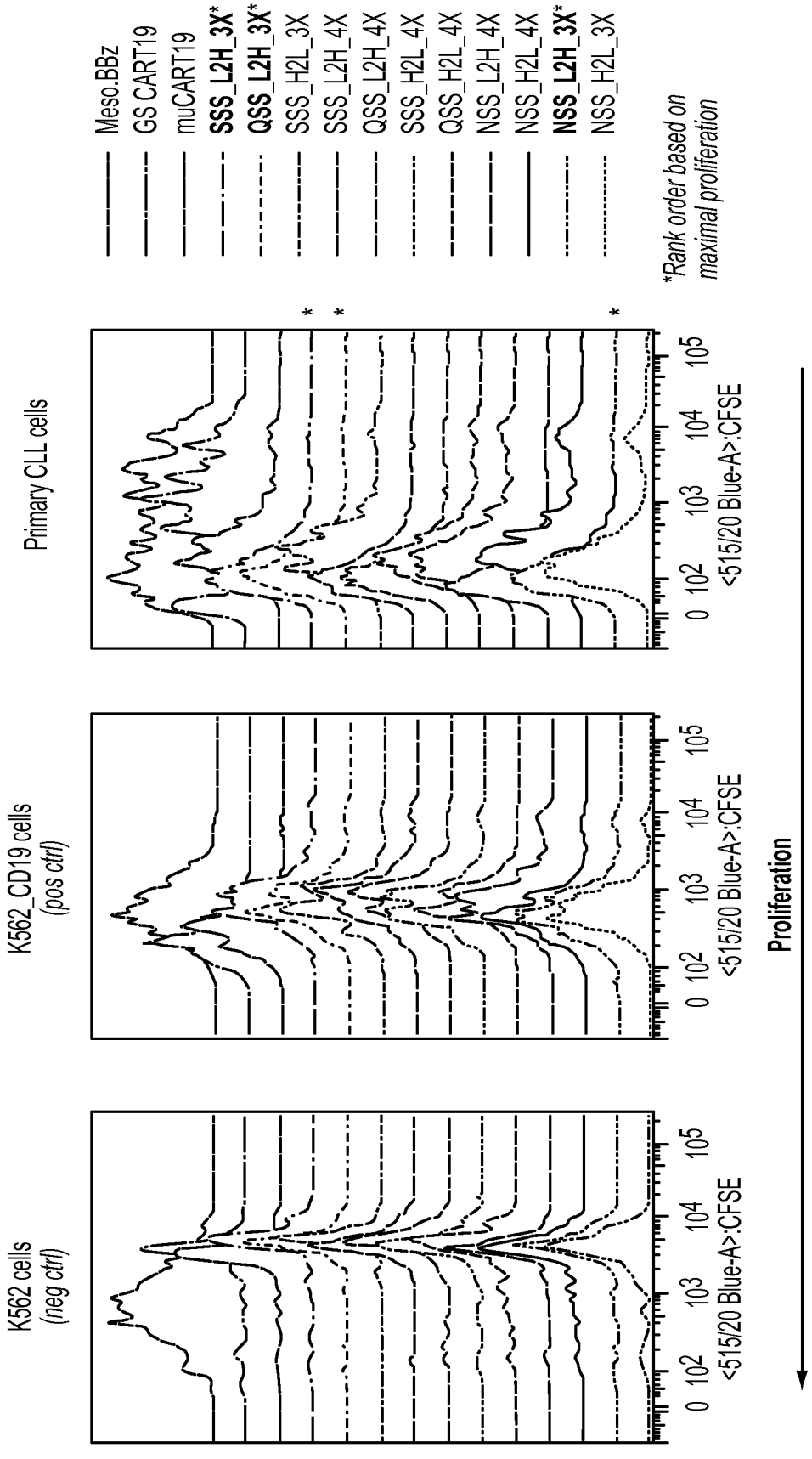

K562 cells
(neg ctrl)
K562_CD19 cells
(pos ctrl)
Primary CLL cells
<515/20 Blue-A>:CFSE
0 10^2 10^3 10^4 10^5
Proliferation
Meso.BBz
GS CART19
muCART19
SSS_L2H_3X*
QSS_L2H_3X*
SSS_H2L_3X
SSS_L2H_4X
QSS_L2H_4X
SSS_H2L_4X
QSS_H2L_4X
NSS_L2H_4X
NSS_H2L_4X
NSS_L2H_3X*
NSS_H2L_3X
*Rank order based on maximal proliferation

FIG. 5

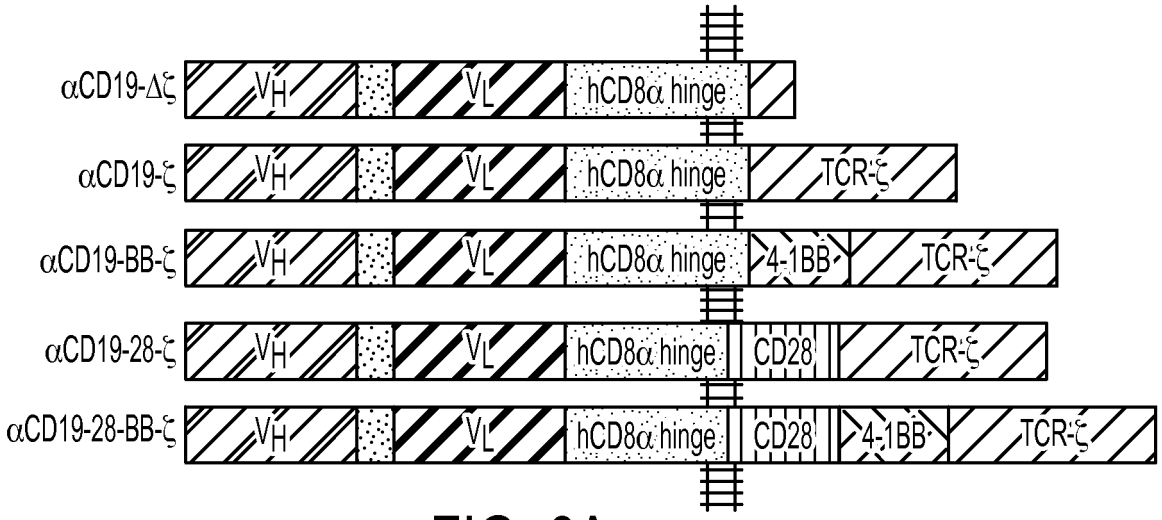

αCD19-Δζ
VH
VL
hCD8α hinge
αCD19-ζ
VH
VL
hCD8α hinge
TCR-ζ
αCD19-BB-ζ
VH
VL
hCD8α hinge
4-1BB
TCR-ζ
αCD19-28-ζ
VH
VL
hCD8α hinge
CD28
TCR-ζ
αCD19-28-BB-ζ
VH
VL
hCD8α hinge
CD28
4-1BB
TCR-ζ

FIG. 6A

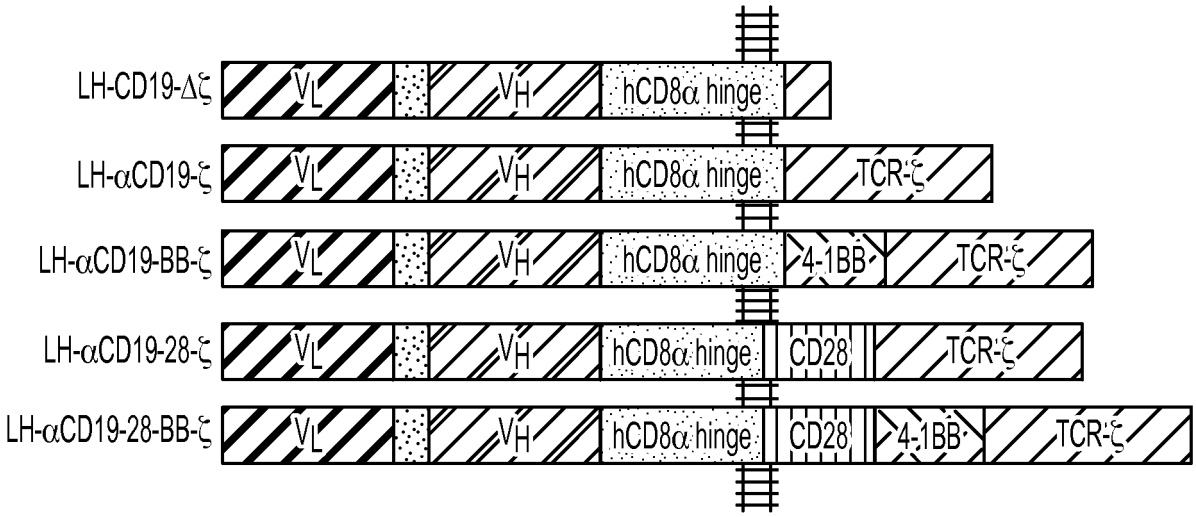

LH-CD19-Δζ
VL
VH
hCD8α hinge
LH-αCD19-ζ
VL
VH
hCD8α hinge
TCR-ζ
LH-αCD19-BB-ζ
VL
VH
hCD8α hinge
4-1BB
TCR-ζ
LH-αCD19-28-ζ
VL
VH
hCD8α hinge
CD28
TCR-ζ
LH-αCD19-28-BB-ζ
VL
VH
hCD8α hinge
CD28
4-1BB
TCR-ζ

FIG. 6B

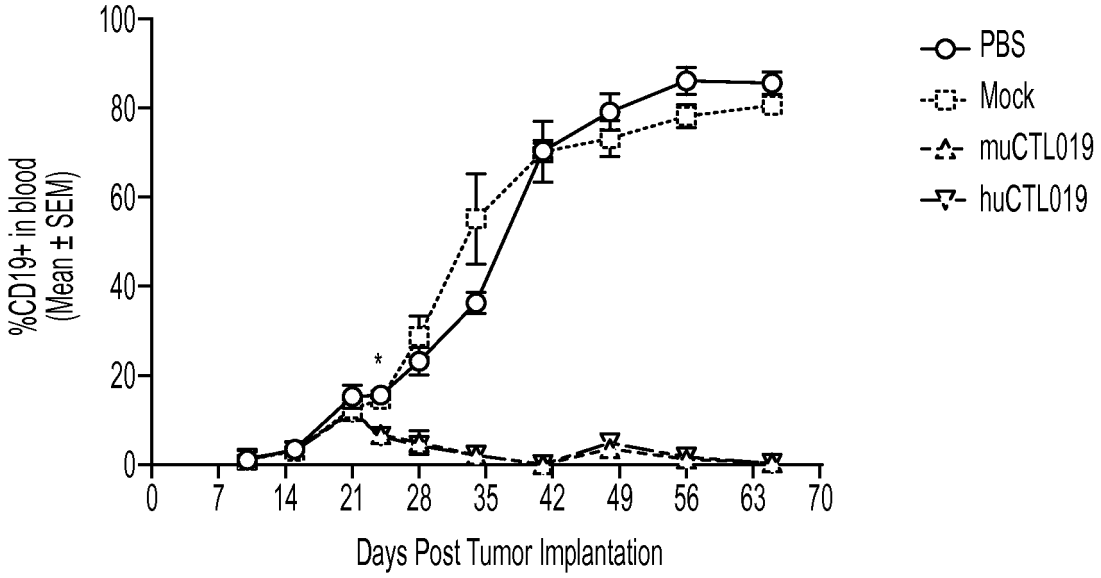

100
80
60
40
20
0
%CD19+ in blood
(Mean ± SEM)
*
0
7
14
21
28
35
42
49
56
63
70
Days Post Tumor Implantation
PBS
Mock
muCTL019
huCTL019

FIG. 7

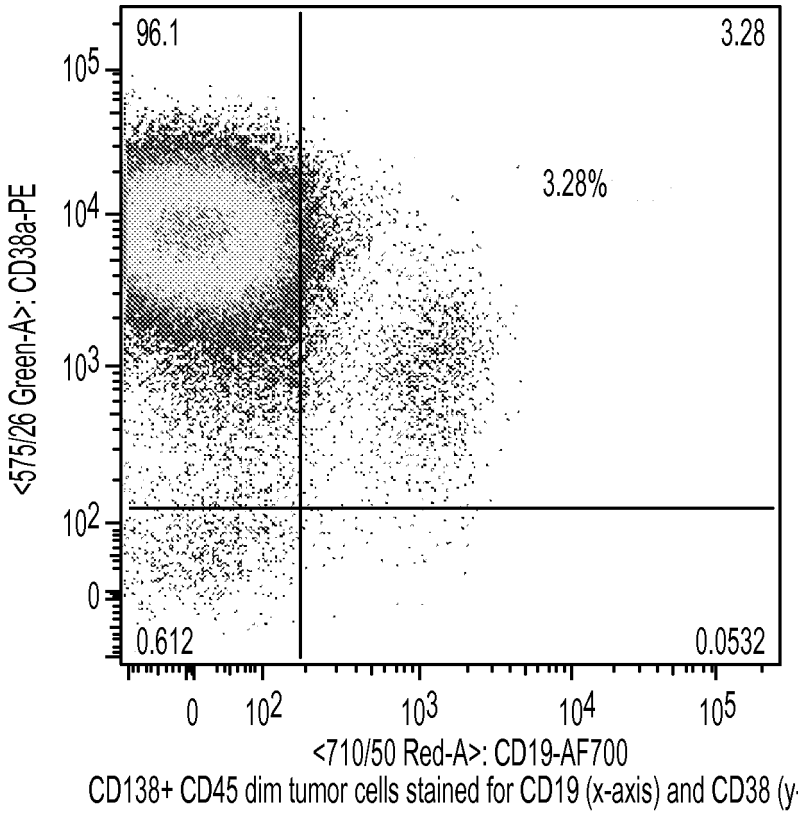

96.1
3.28
3.28%
0.612
0.0532
$10^5$
$10^4$
$10^3$
$10^2$
0
<575/26 Green-A>: CD38a-PE
0
$10^2$
$10^3$
$10^4$
$10^5$
<710/50 Red-A>: CD19-AF700
CD138+ CD45 dim tumor cells stained for CD19 (x-axis) and CD38 (y-axis)

FIG. 8