FIG. 1

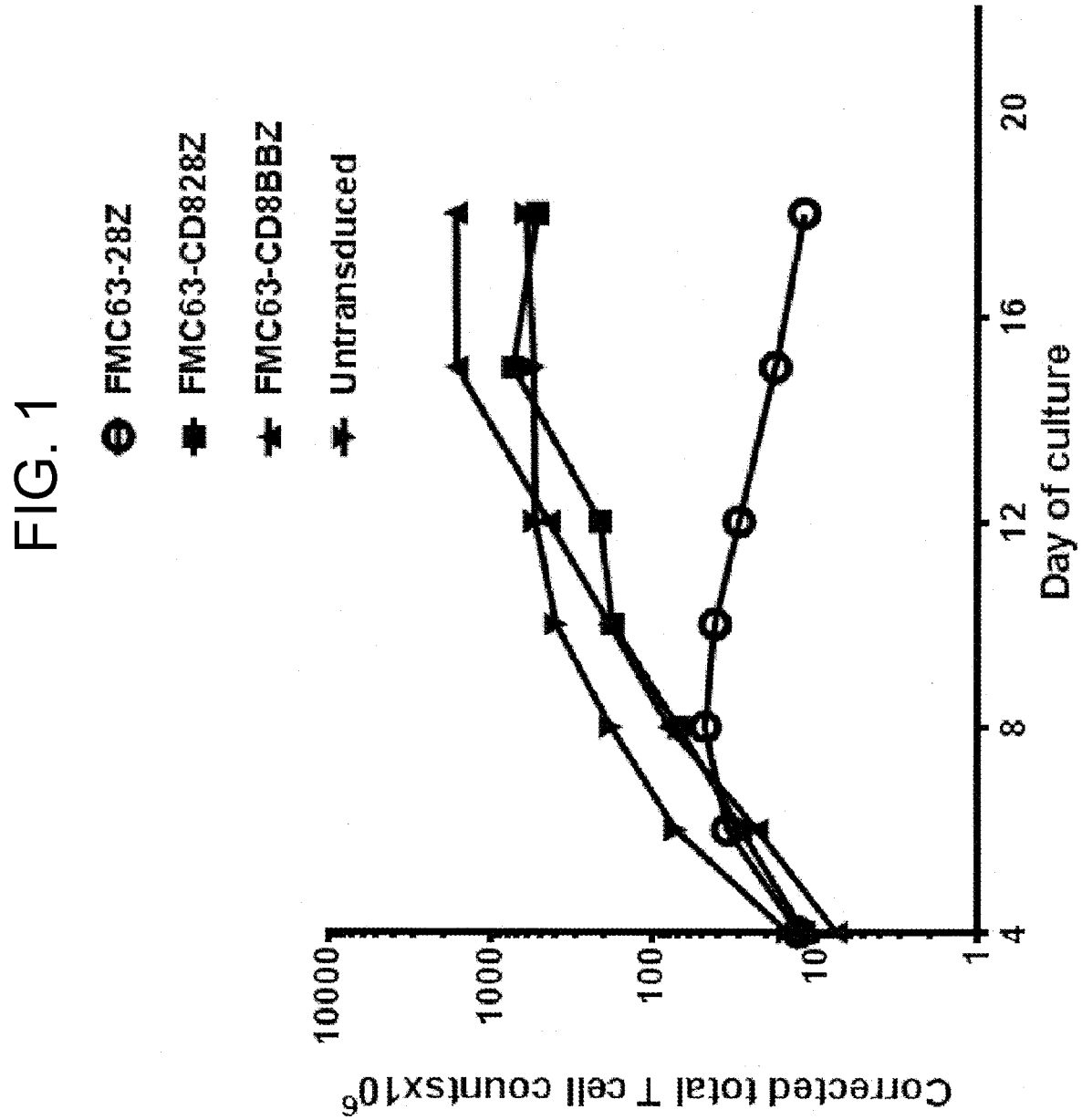

FMC63-28Z
FMC63-CD828Z
FMC63-CD8BBZ
Untransduced
Corrected total T cell counts x10^6
10000
1000
100
10
1
4
8
12
16
20
Day of culture

FIG. 2A

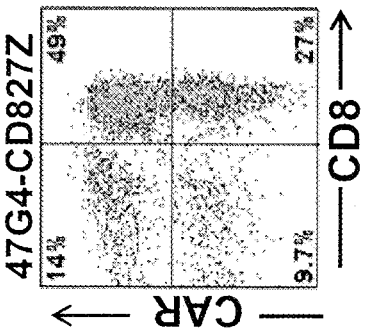


FIG. 2B

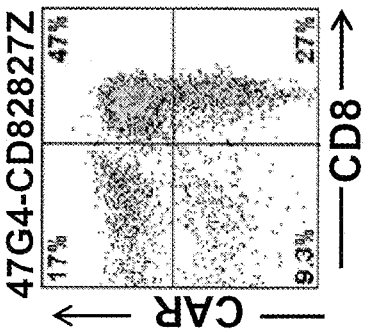


FIG. 2C

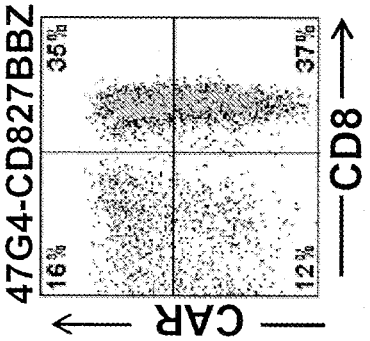


FIG. 2D

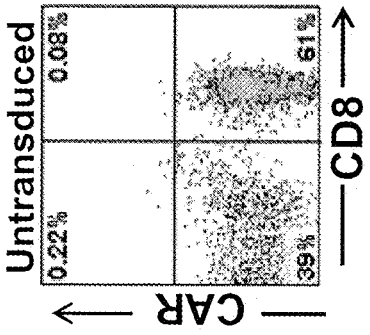


FIG. 3B

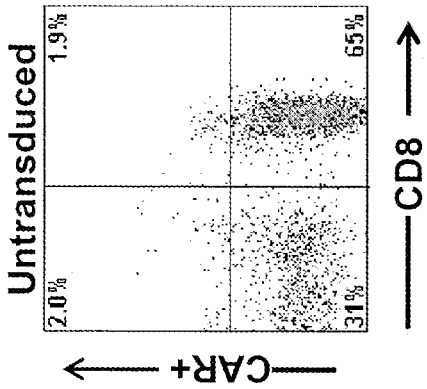

Untransduced
1.9%
65%
2.0%
31%
CAR+
CD8

FIG. 3A

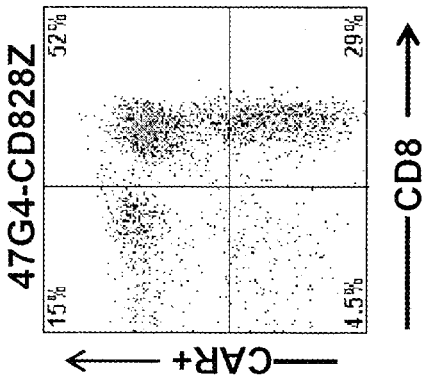

47G4-CD828Z
52%
29%
15%
4.5%
CAR+
CD8

FIG. 4B

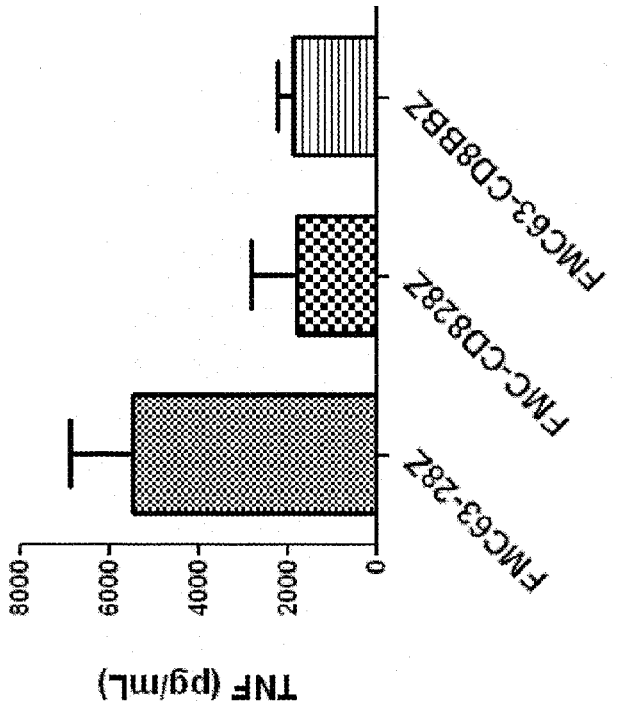

NALM6
TNF (pg/mL)
8000
6000
4000
2000
0
FMC63-28Z
FMC-CD828Z
FMC63-CD8BBZ

FIG. 4A

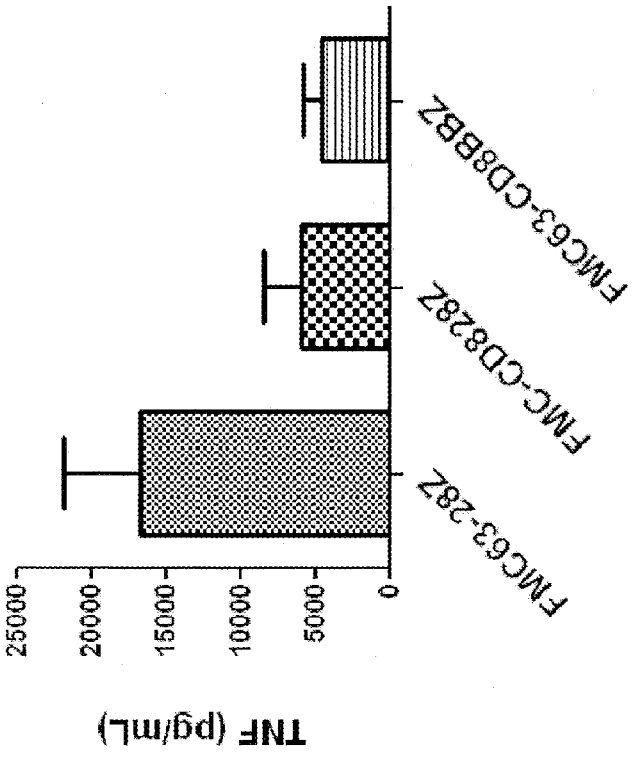

CD19-K562
TNF (pg/mL)
25000
20000
15000
10000
5000
0
FMC63-28Z
FMC-CD828Z
FMC63-CD8BBZ

FIG. 5

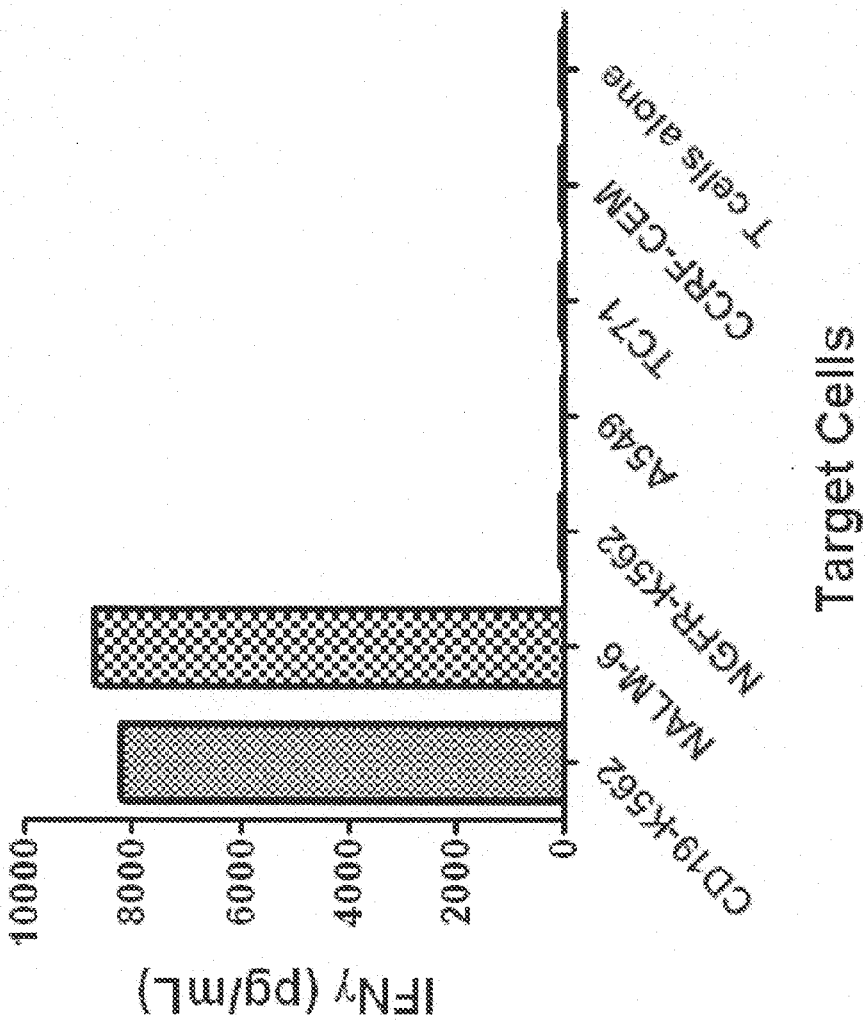

IFNγ (pg/mL)
10000
8000
6000
4000
2000
0
CD19-K562
NALM-6
NGFR-K562
A549
TC71
CCRF-CEM
T cells alone
Target Cells

FIG. 6A

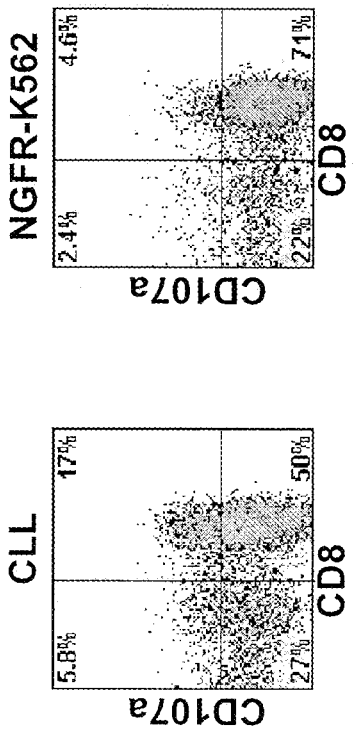

47G4-CD827Z
NGFR-K562
CLL
CD107a
CD8
2.4%
4.6%
22%
71%
5.8%
17%
27%
50%

FIG. 6B

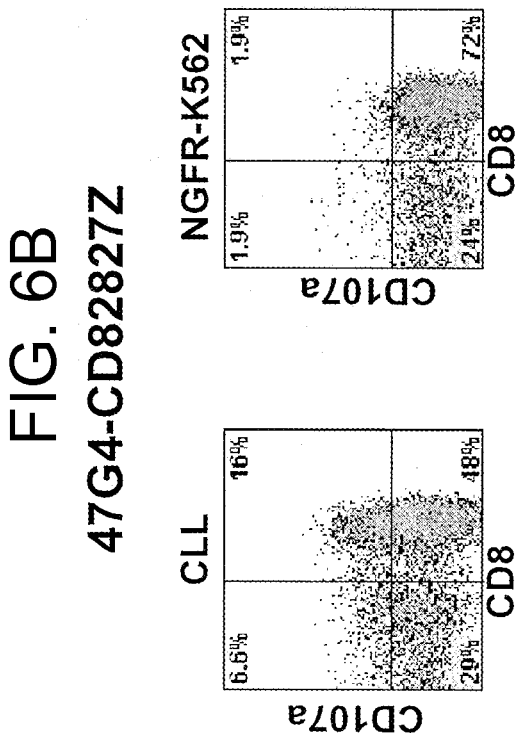

47G4-CD82827Z
NGFR-K562
CLL
CD107a
CD8
1.9%
1.9%
24%
72%
6.6%
16%
29%
48%

FIG. 6C

47G4-CD827BBZ

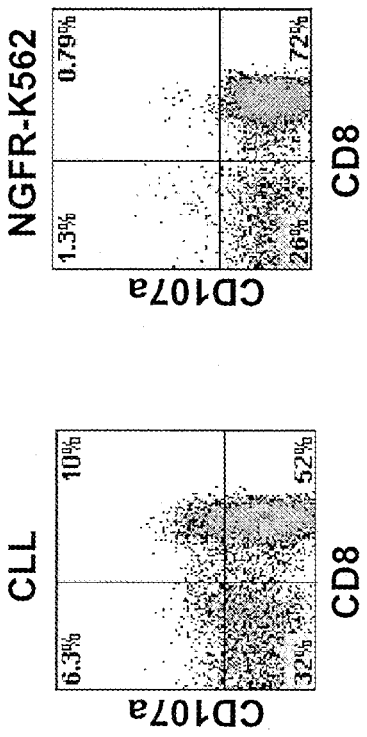


FIG. 6D

Untransduced

FIG. 7A

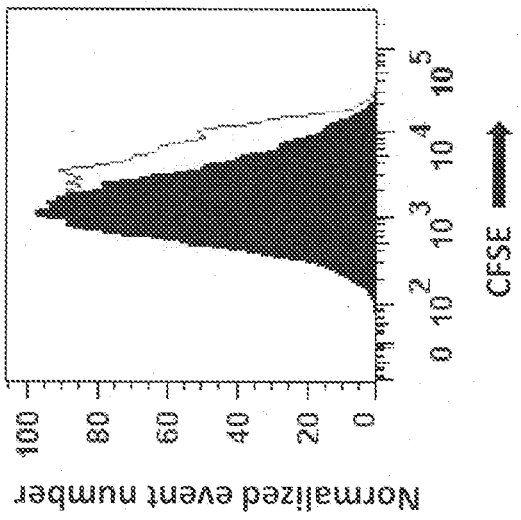


FIG. 7B

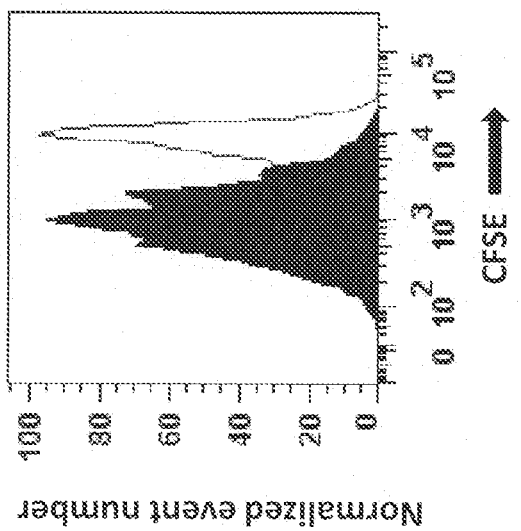


FIG. 7C

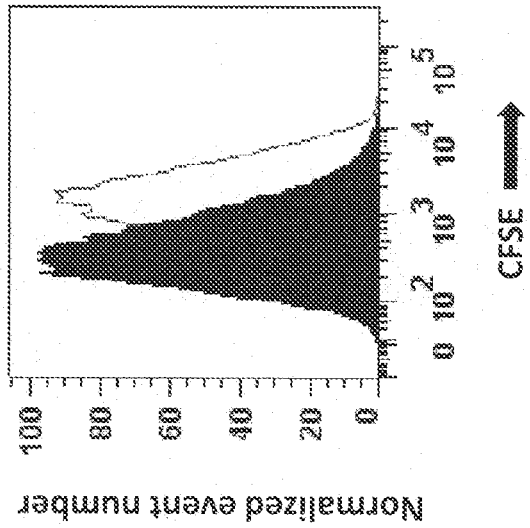


FIG. 8

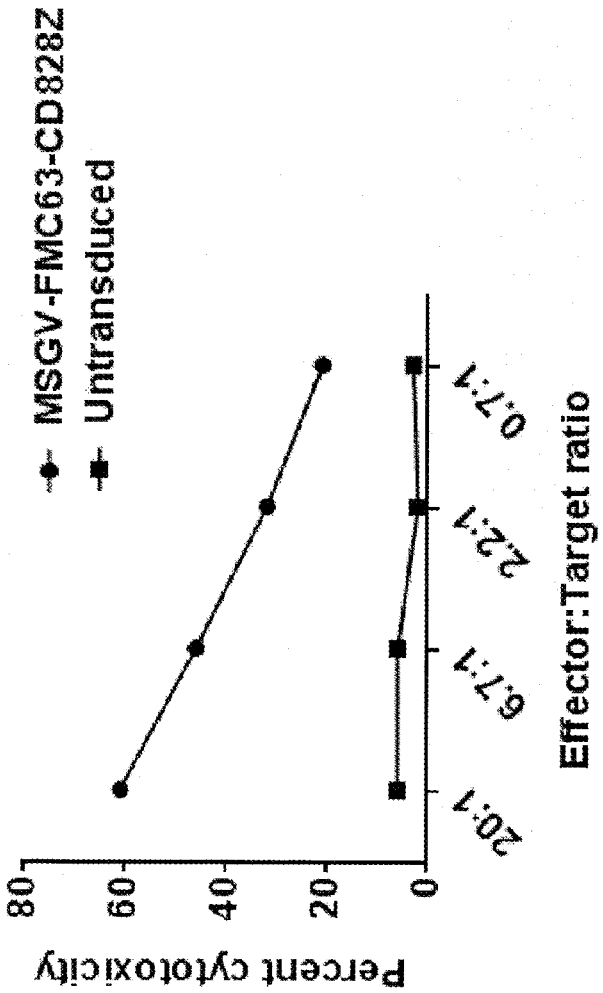
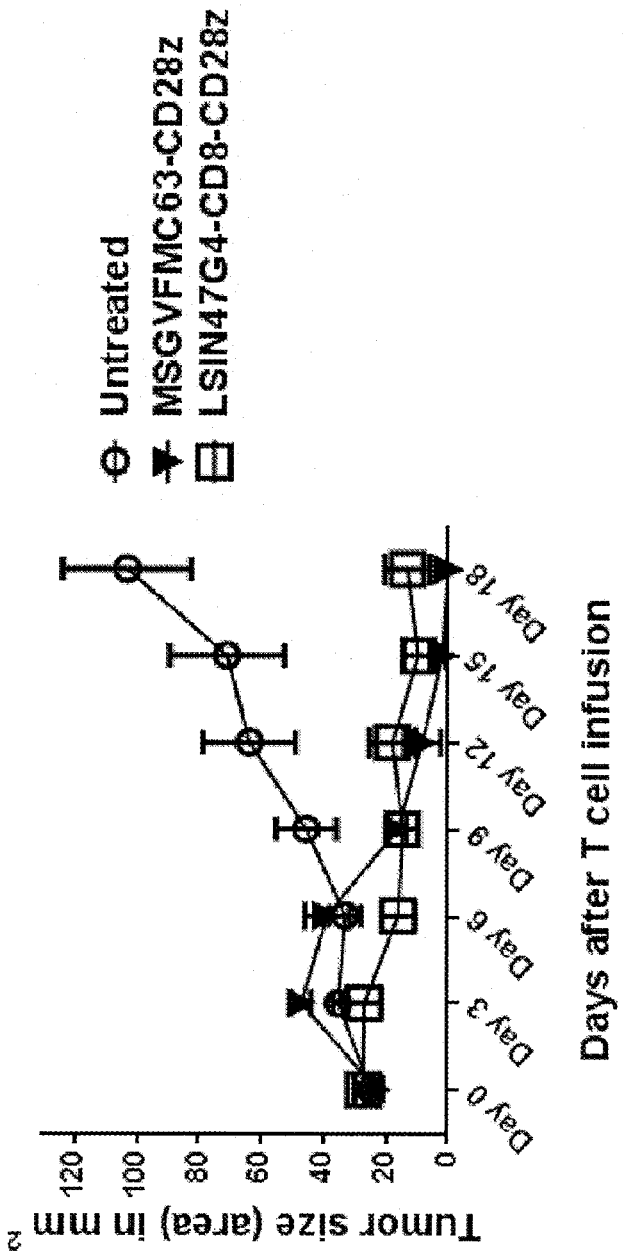

MSGV-FMC63-CD828Z
Untransduced
Percent cytotoxicity
80
60
40
20
0
20:1
6.7:1
2.2:1
0.7:1
Effector:Target ratio

FIG. 9


Untreated
MSGVFMC63-CD28z
LSIN47G4-CD8-CD28z
Tumor size (area) in mm 2
120
100
80
60
40
20
0
Day 0
Day 3
Day 6
Day 9
Day 12
Day 15
Day 18
Days after T cell infusion