FIG. 1

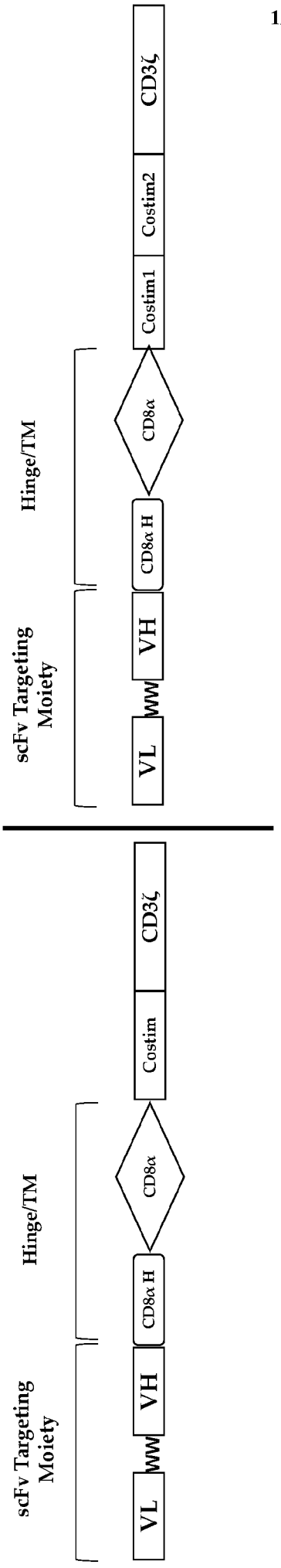

scFv Targeting Moiety
VL
WW
VH
CD8α H
Hinge/TM
CD8α
Costim
CD3ζ
scFv Targeting Moiety
VL
WW
VH
CD8α H
Hinge/TM
CD8α
Costim1
Costim2
CD3ζ

FIG. 2

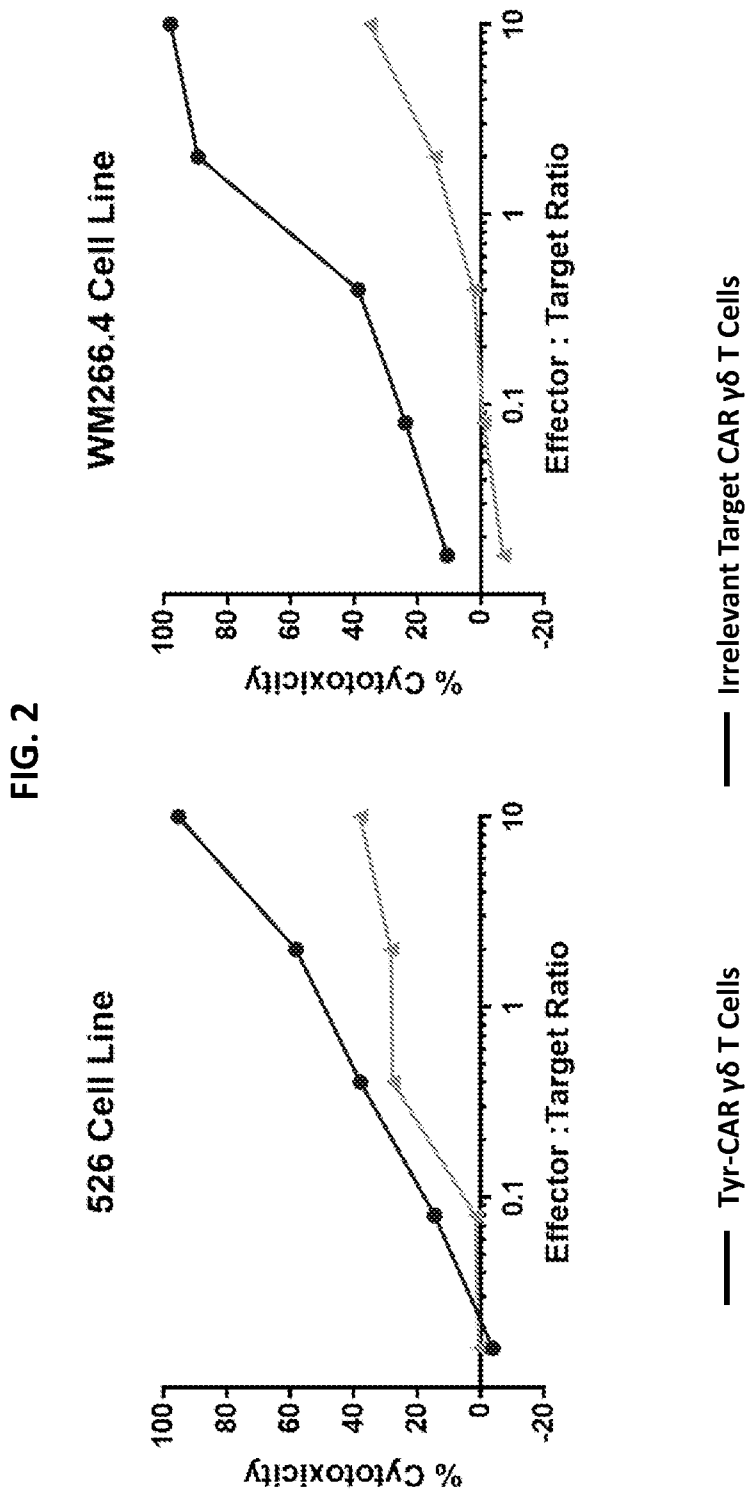
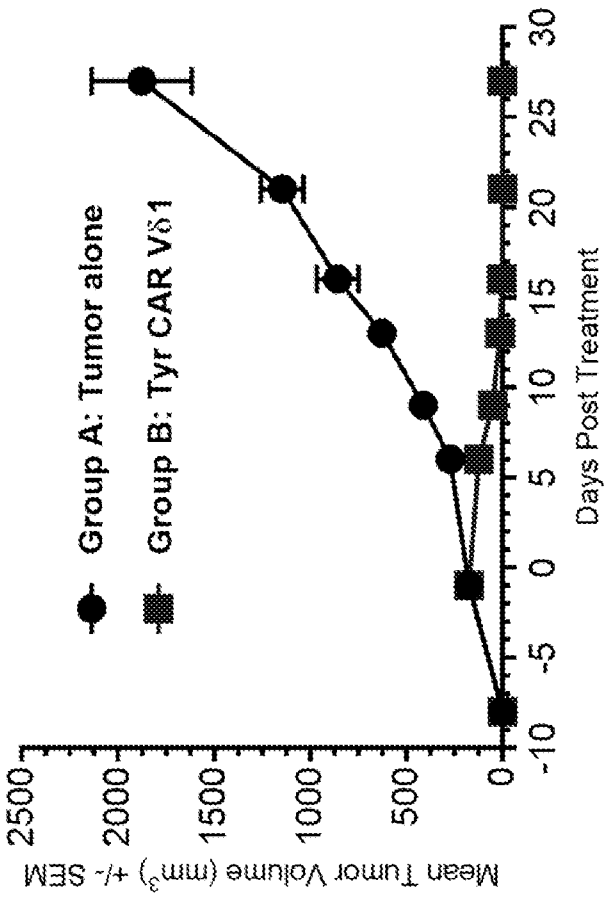

526 Cell Line
WM266.4 Cell Line
% Cytotoxicity
100
80
60
40
20
0
-20
0.1
1
10
Effector : Target Ratio
Tyr-CAR γδ T Cells
Irrelevant Target CAR γδ T Cells

FIG. 3


WM266.4
Group A: Tumor alone
Group B: Tyr CAR Vδ1
Mean Tumor Volume (mm3) +/- SEM
2500
2000
1500
1000
500
0
-10
-5
0
5
10
15
20
25
30
Days Post Treatment

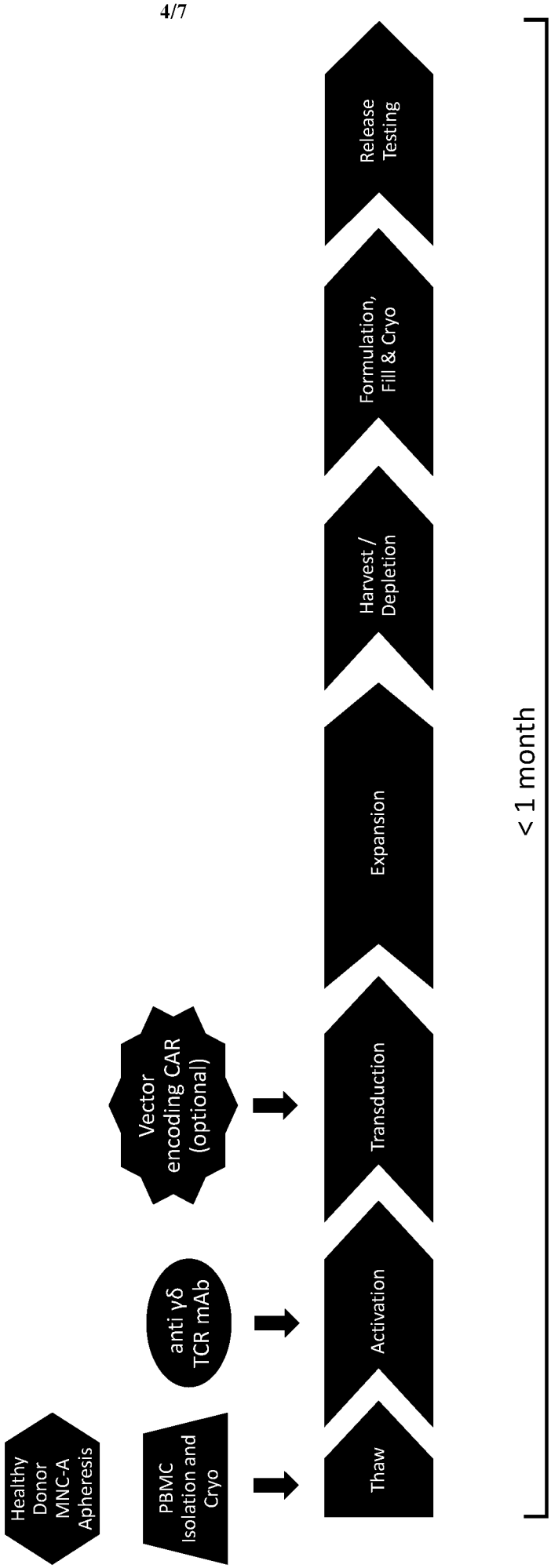
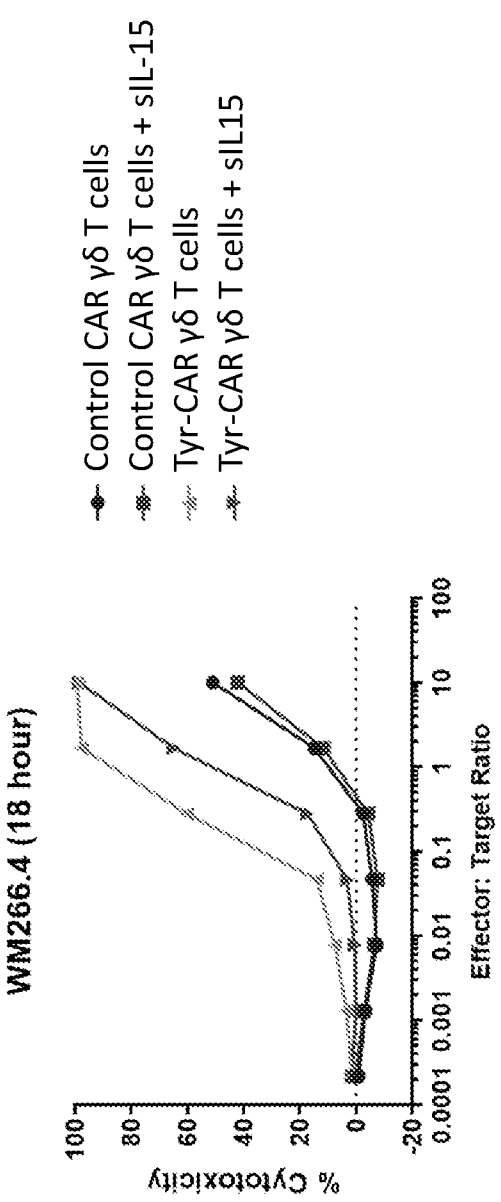

γδ T cell and CAR γδ T Cell Manufacturing Process Flow
Healthy Donor MNC-A Apheresis
PBMC Isolation and Cryo
anti γδ TCR mAb
Vector encoding CAR (optional)
Thaw
Activation
Transduction
Expansion
Harvest / Depletion
Formulation, Fill & Cryo
Release Testing
< 1 month

Fig. 4

Fig. 5


WM266.4 (18 hour)
Control CAR γδ T cells
Control CAR γδ T cells + sIL-15
Tyr-CAR γδ T cells
Tyr-CAR γδ T cells + sIL15
% Cytotoxicity
100
80
60
40
20
0
-20
0.0001
0.001
0.01
0.1
1
10
100
Effector: Target Ratio

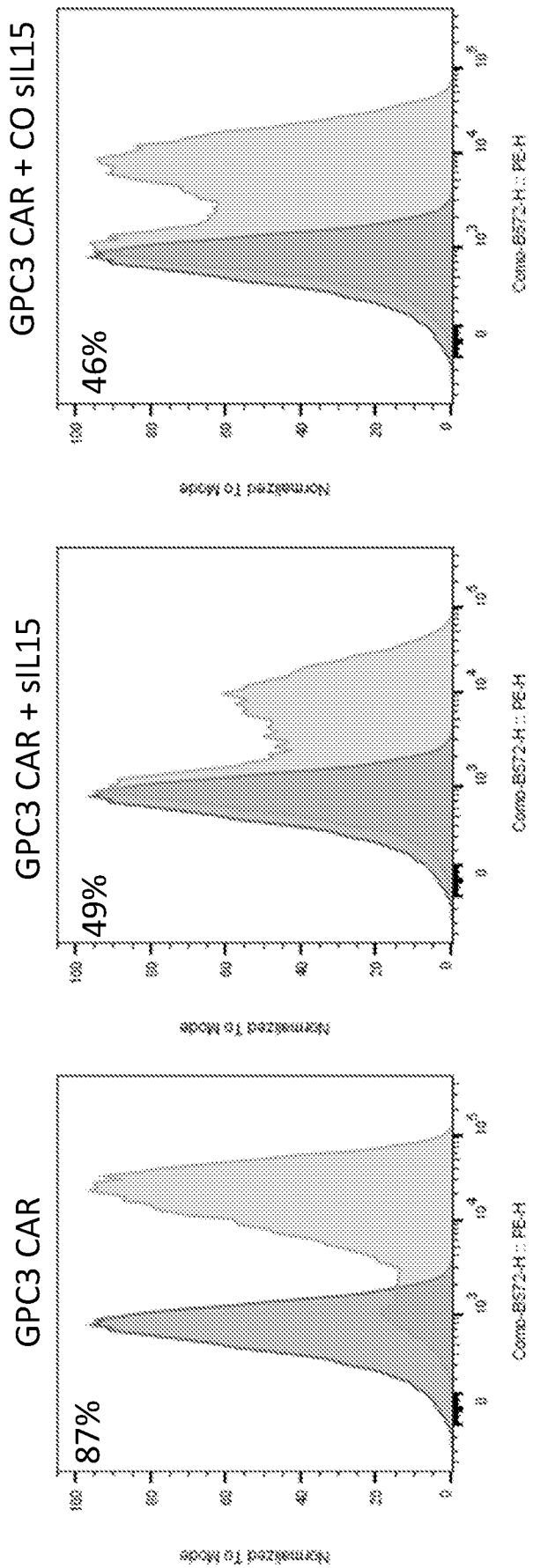
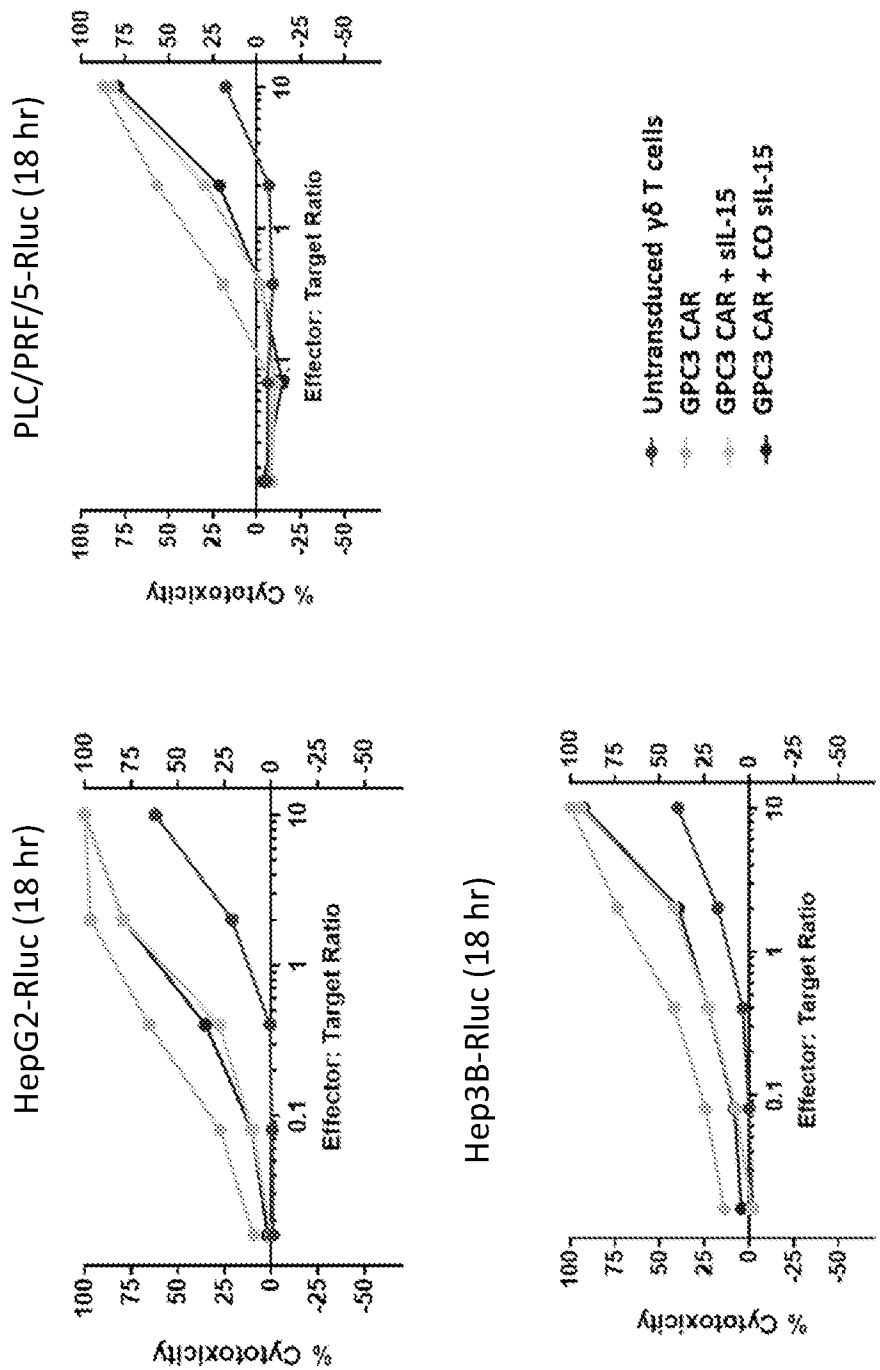

GPC3 CAR
87%
GPC3 CAR + sIL15
49%
GPC3 CAR + CO sIL15
46%
Normalized To Mode
Comp-BV711-H :: PE-H

Fig. 6

Fig. 7


PLC/PRF/5-Rluc (18 hr)
HepG2-Rluc (18 hr)
Hep3B-Rluc (18 hr)
% Cytotoxicity
Effector: Target Ratio
Untransduced γδ T cells
GPC3 CAR
GPC3 CAR + sIL-15
GPC3 CAR + CO sIL-15