

1/57

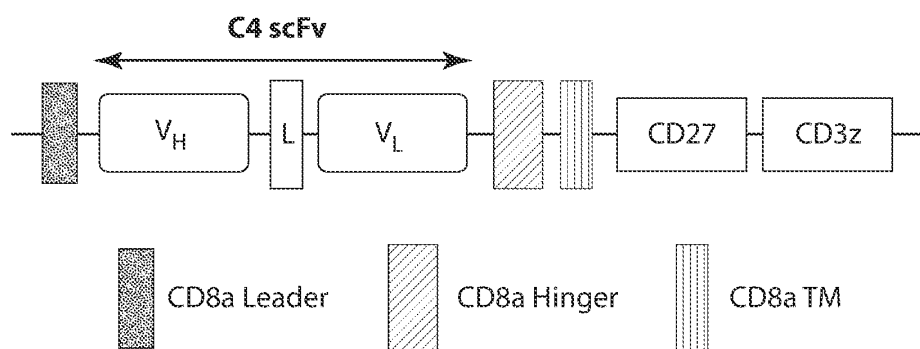


Fig. 1A

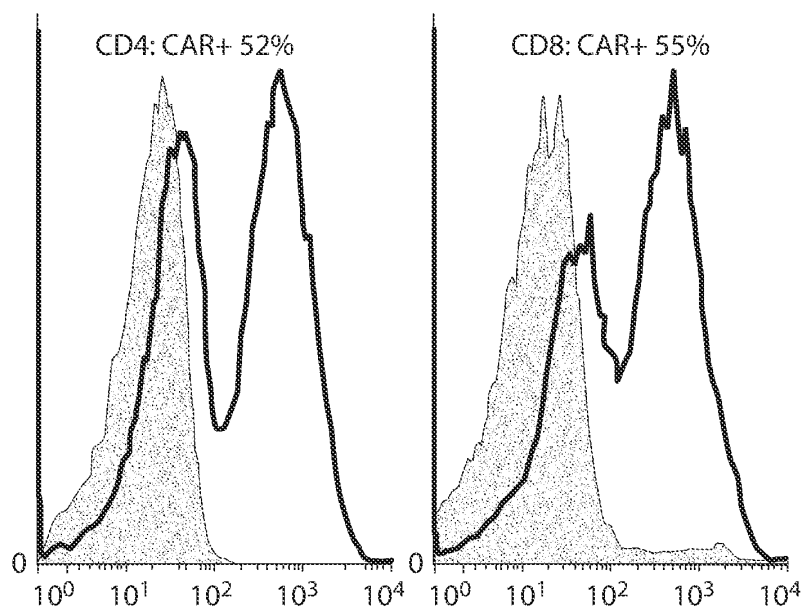


Fig. 1B

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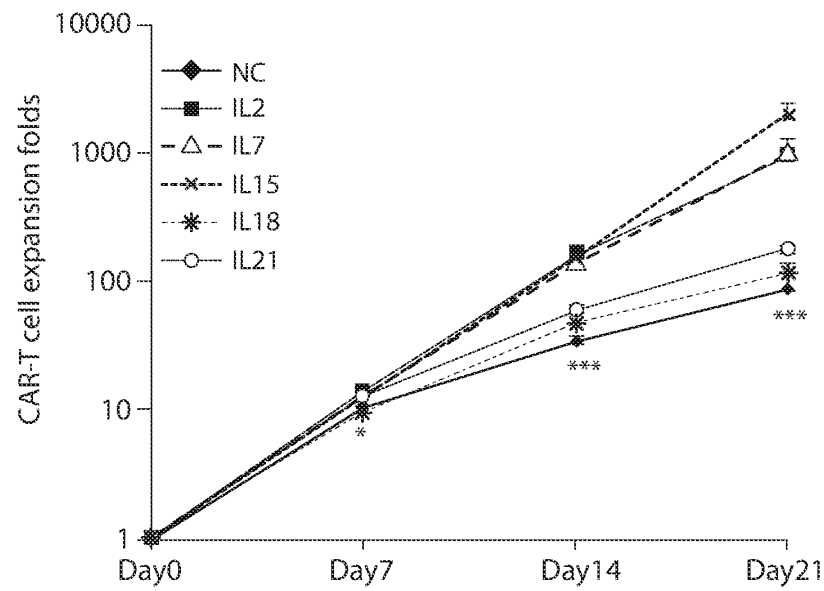


Fig. 1C

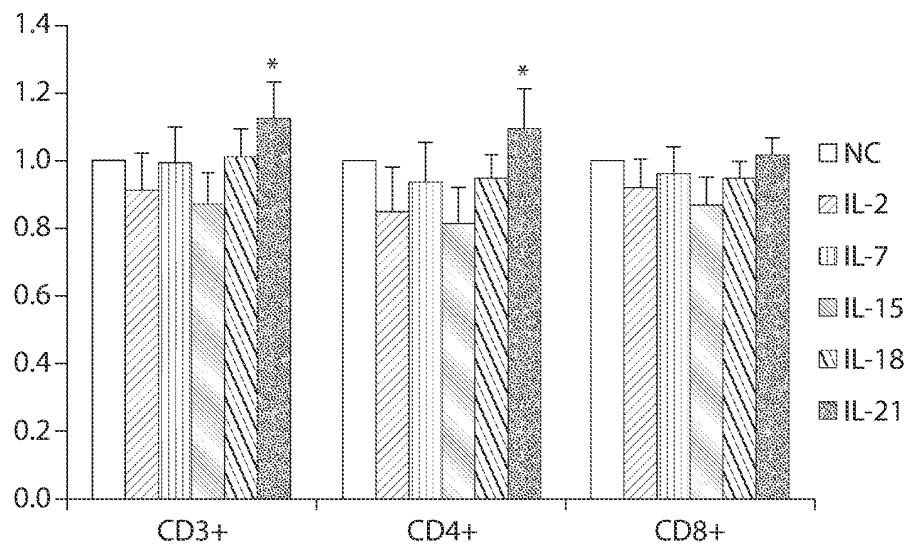


Fig. 1D

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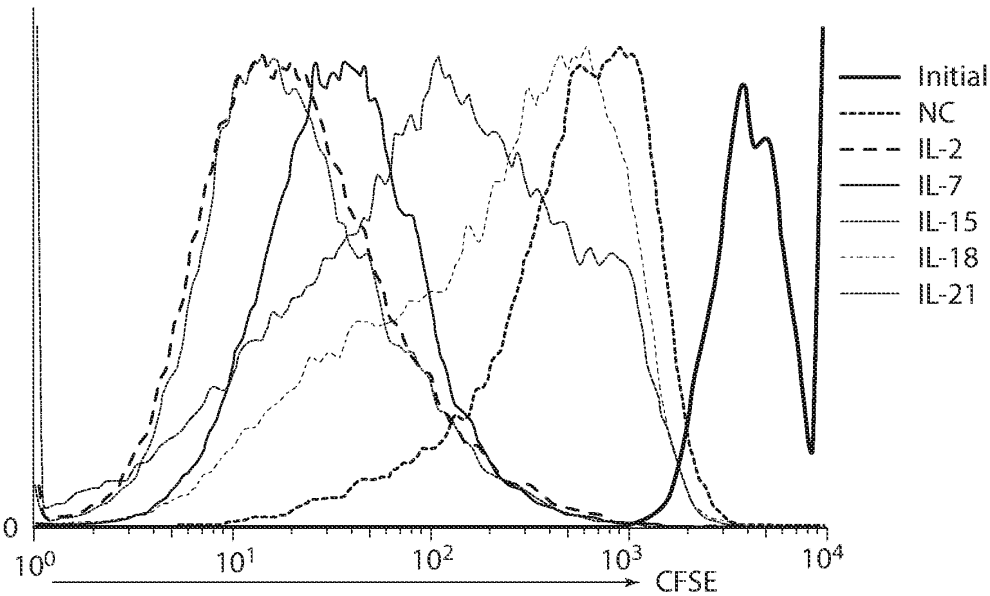


Fig. 1E

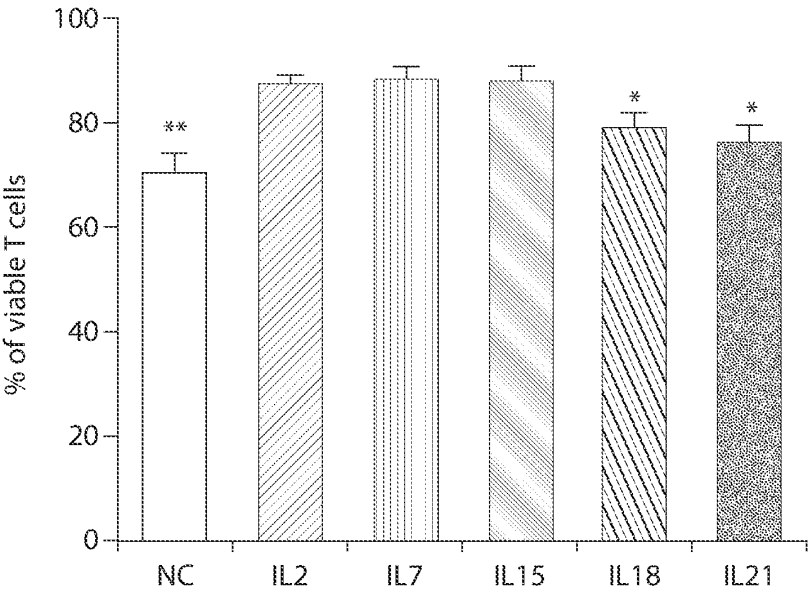


Fig. 1F

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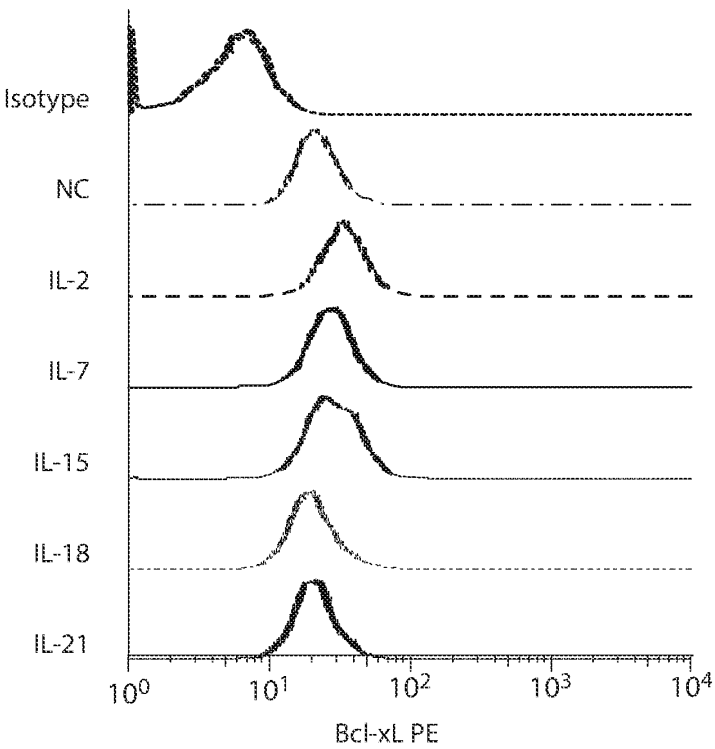


Fig. 1G

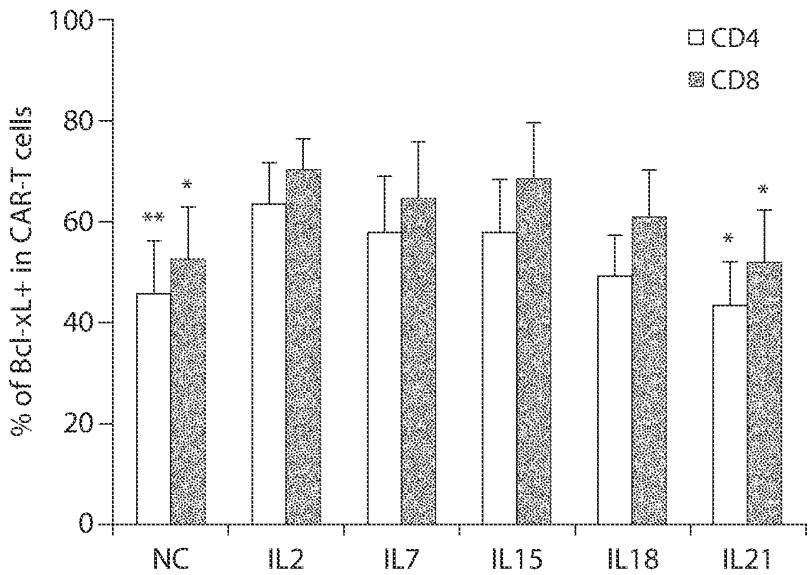


Fig. 1H

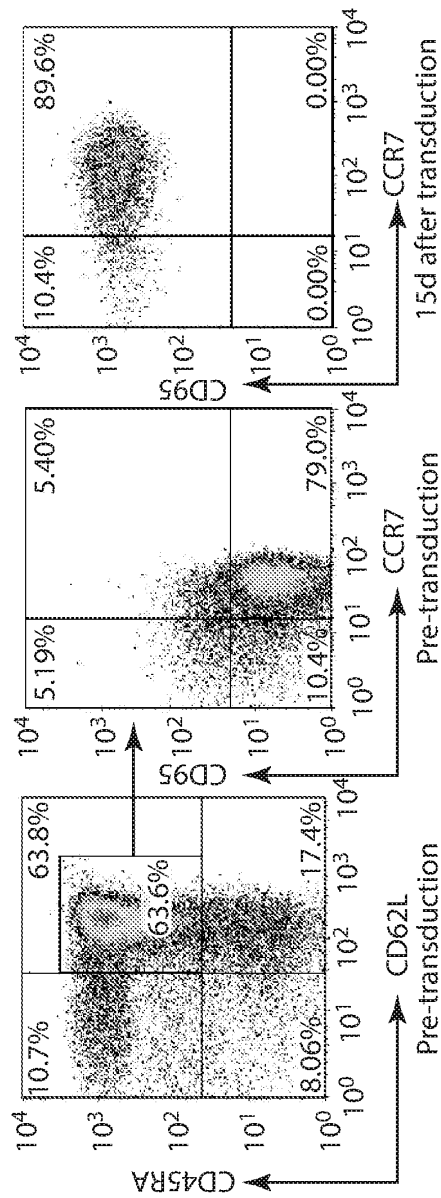


Fig. 2A

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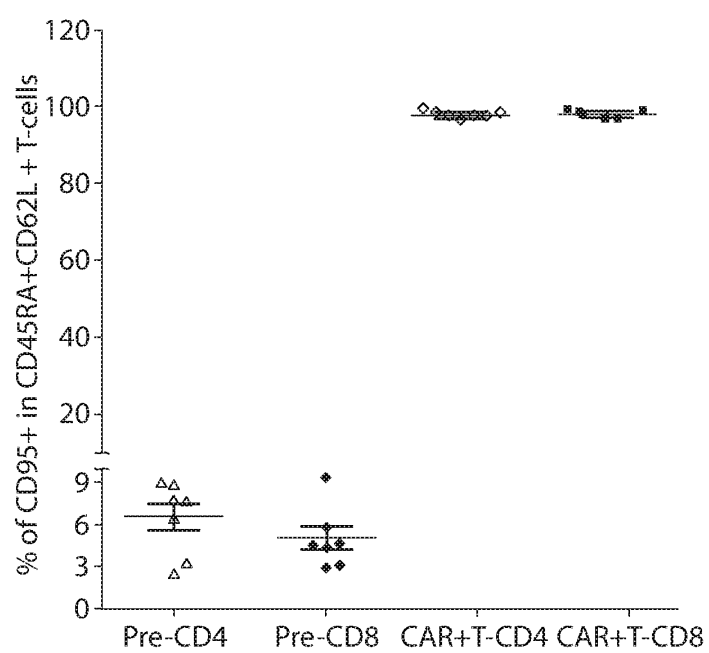


Fig. 2B

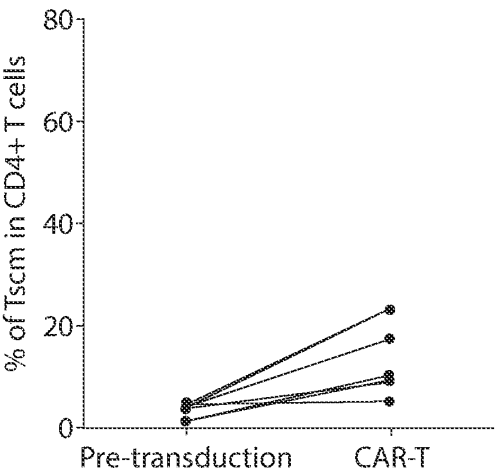


Fig. 2C

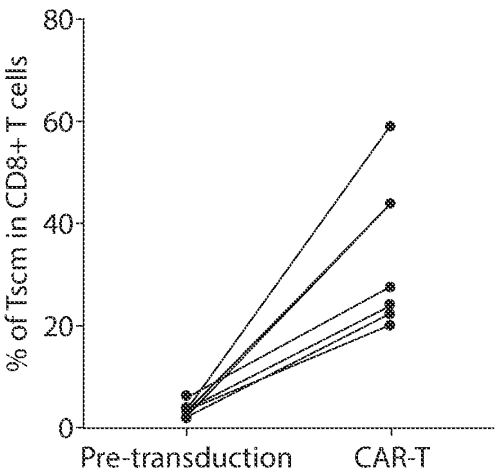


Fig. 2D

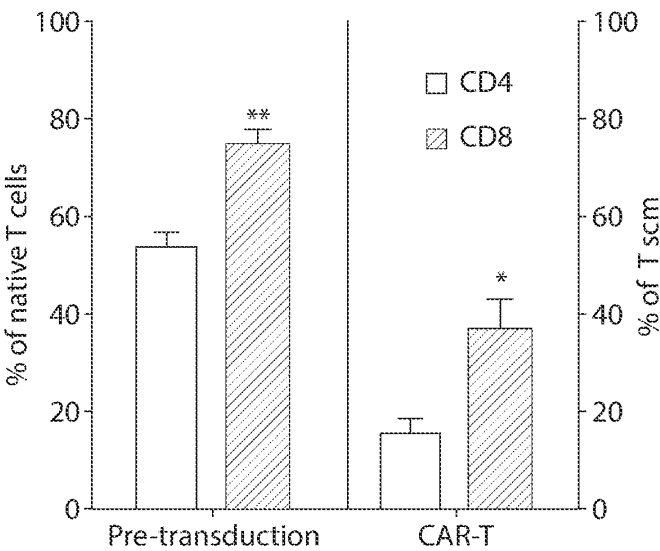


Fig. 2E

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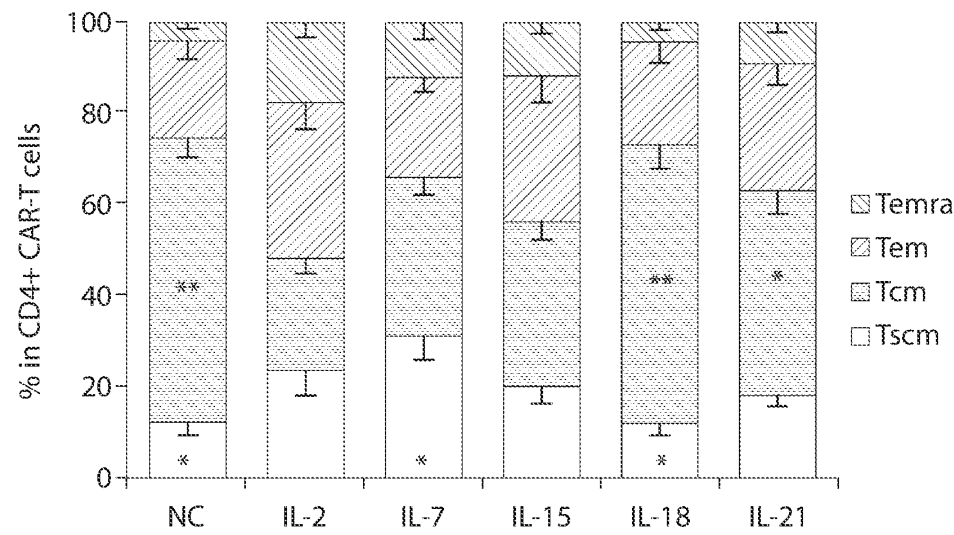


Fig. 2F

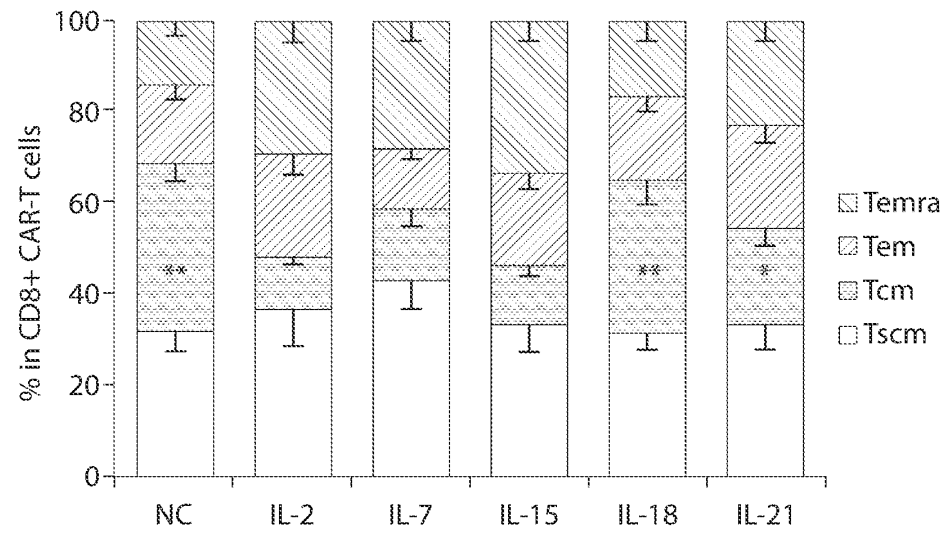


Fig. 2G

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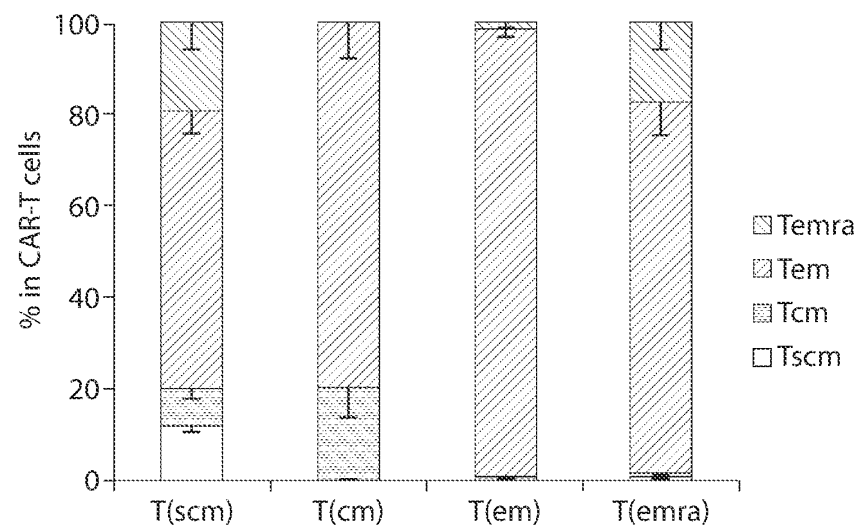


Fig. 2H

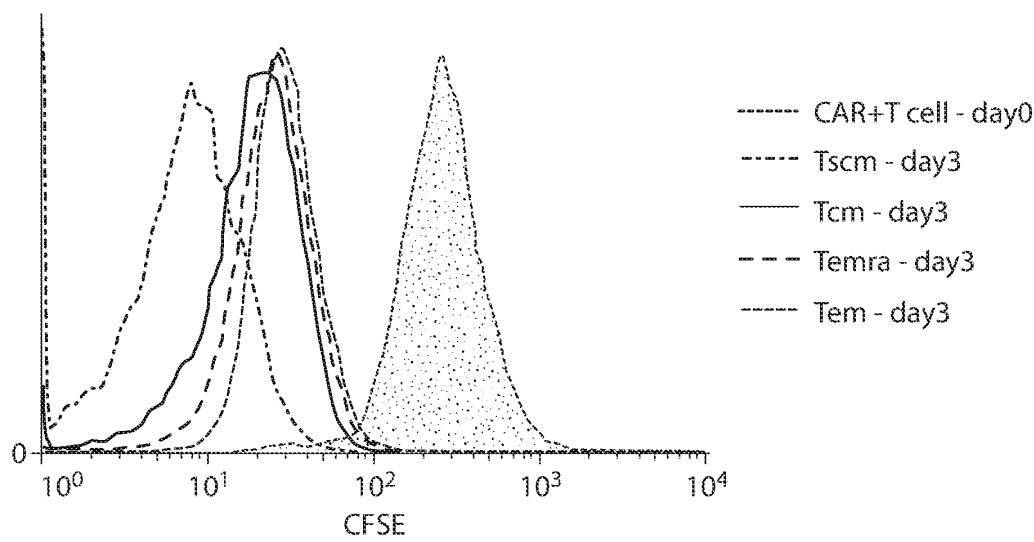


Fig. 2I

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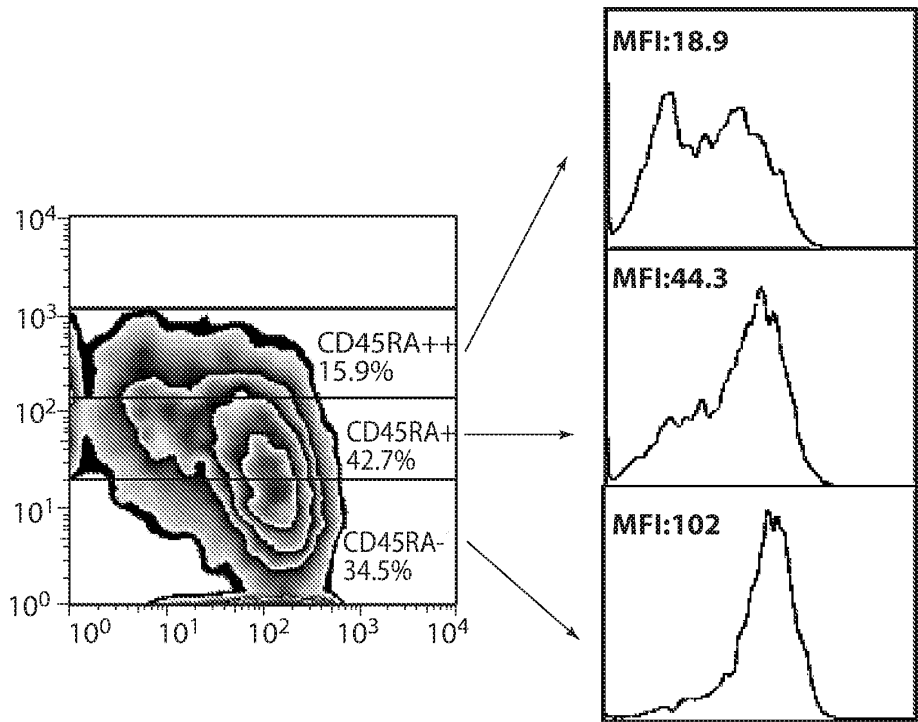


Fig. 3A

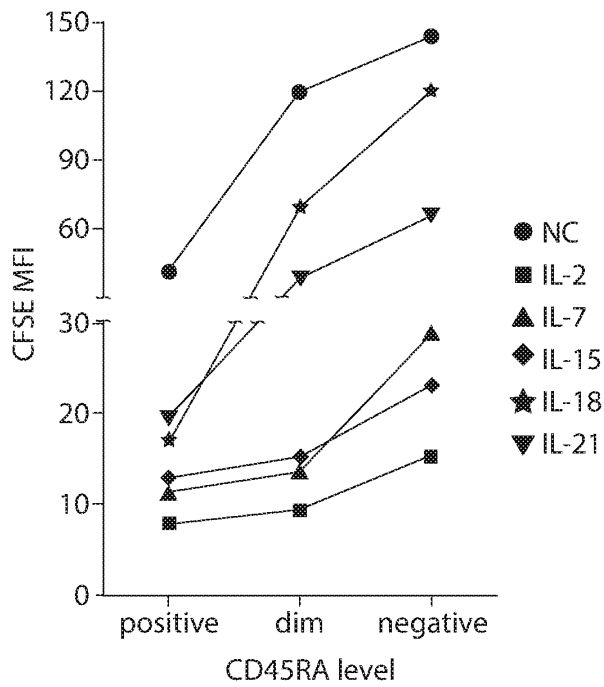


Fig. 3B

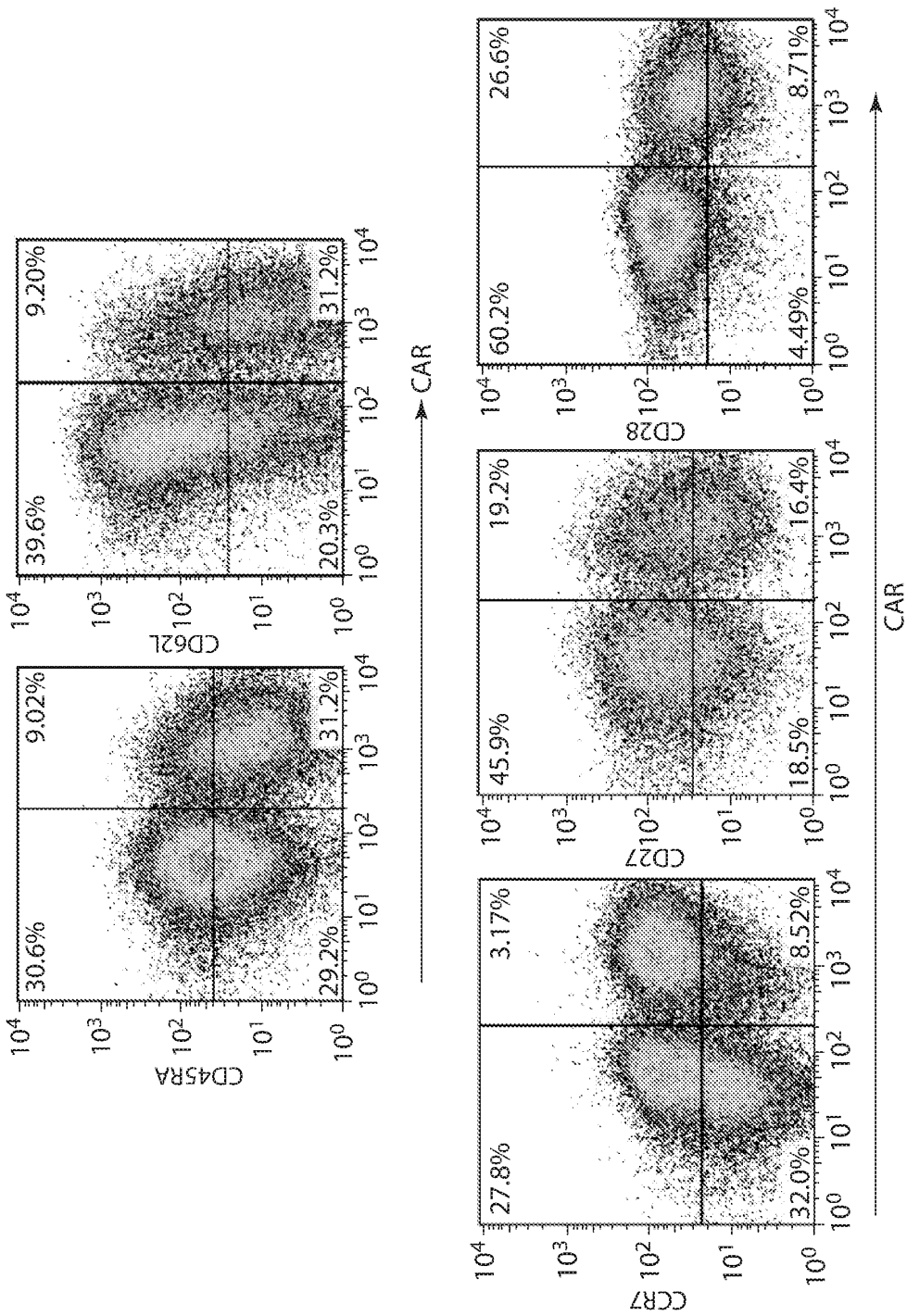


Fig. 4A

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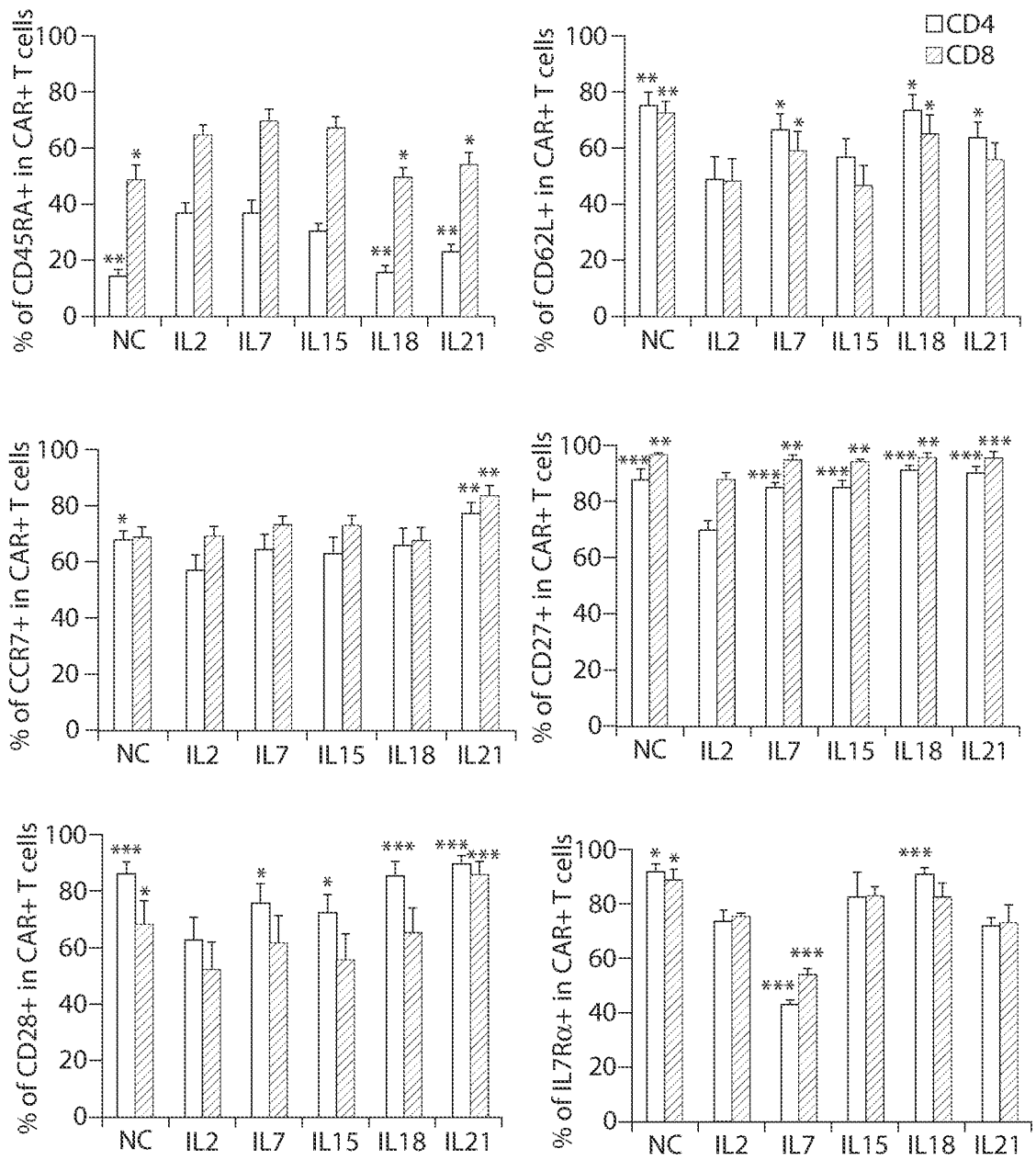


Fig. 4B

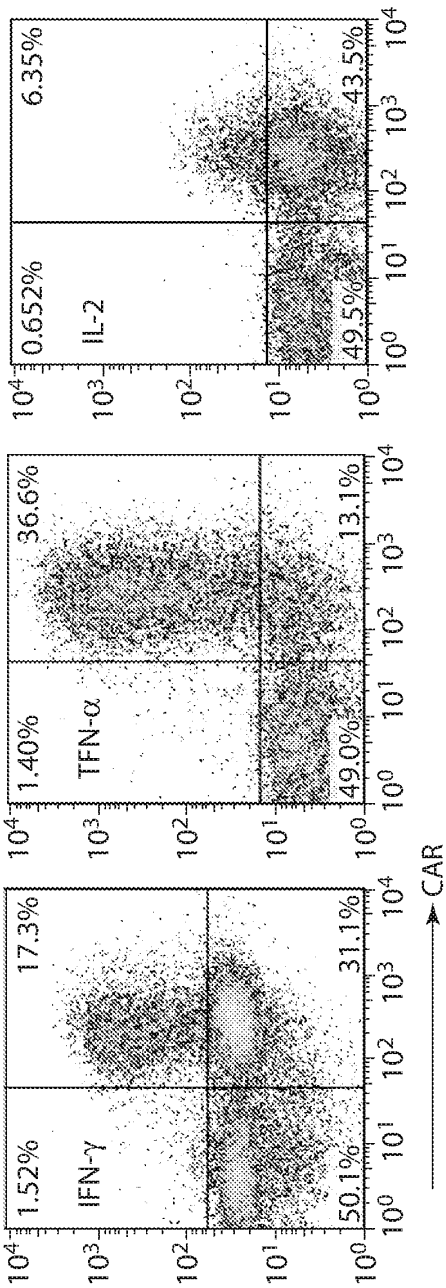


Fig. 5A

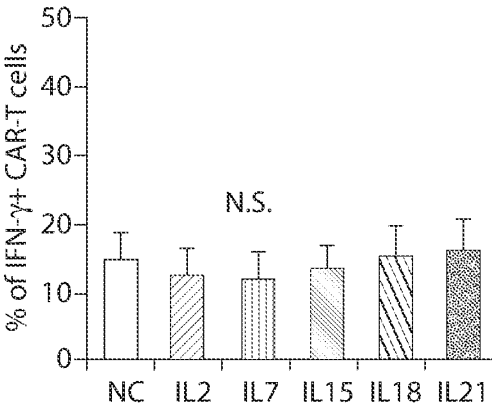


Fig. 5B

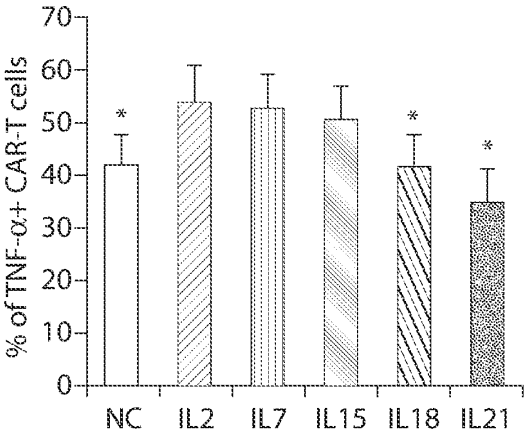


Fig. 5C

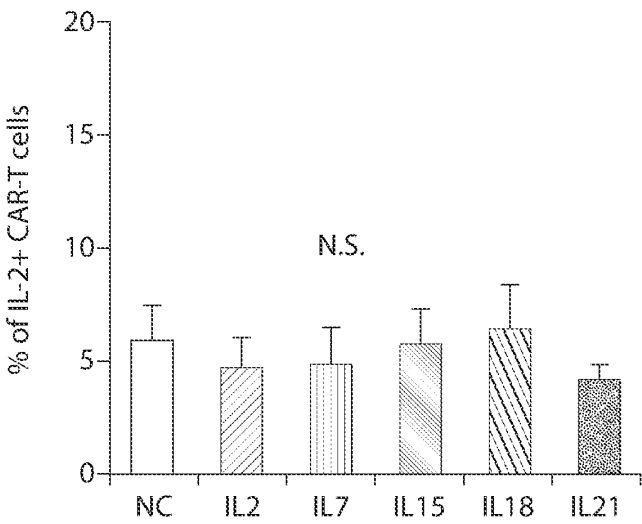


Fig. 5D

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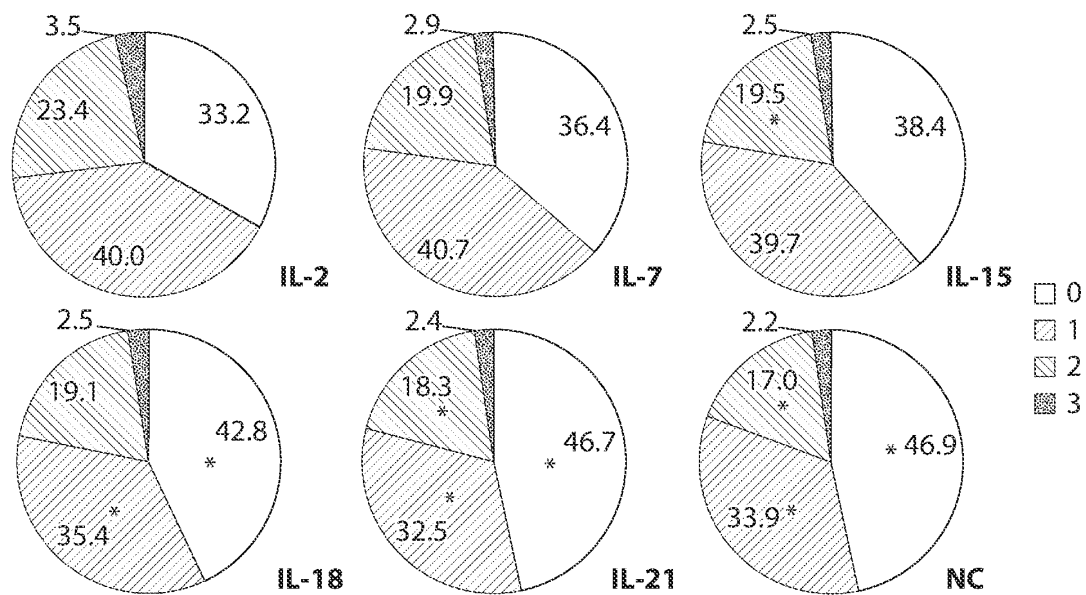


Fig. 5E

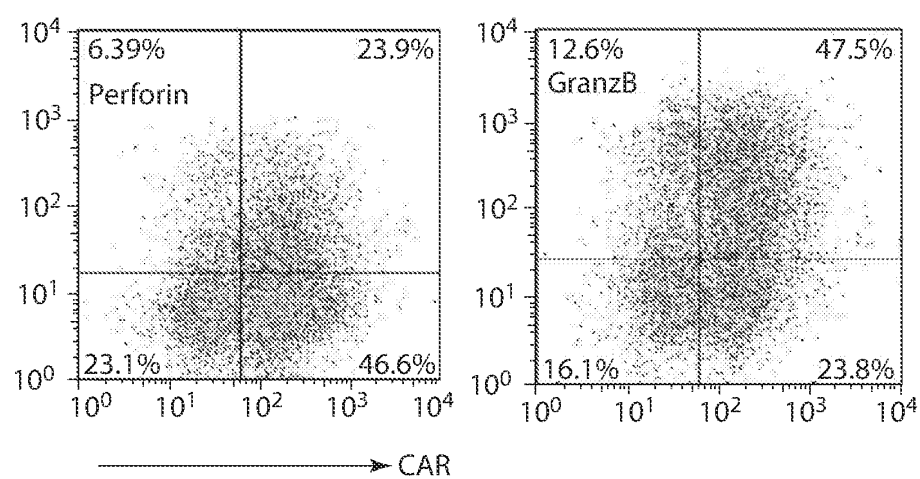


Fig. 5F

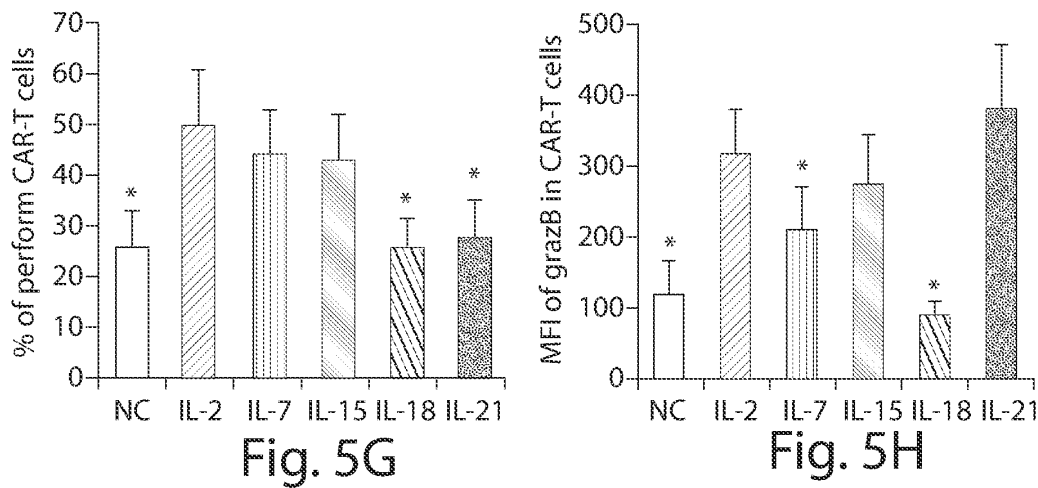
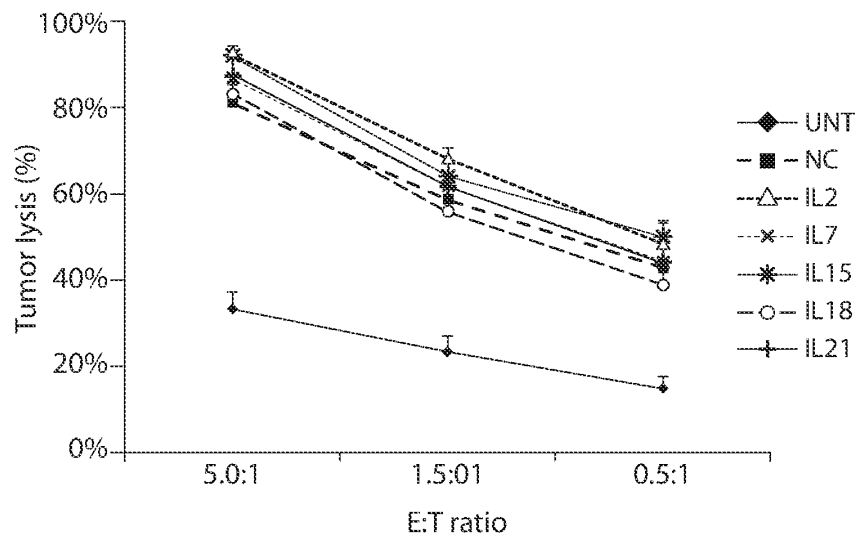


Fig. 5I

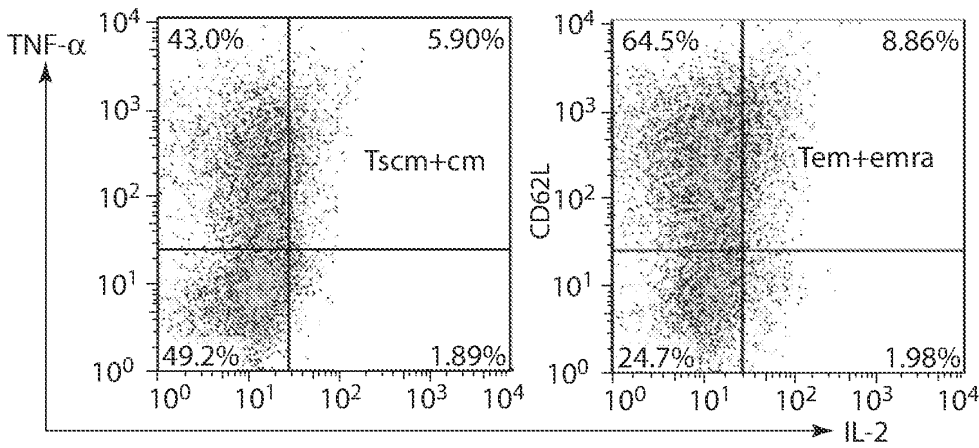


Fig. 6A

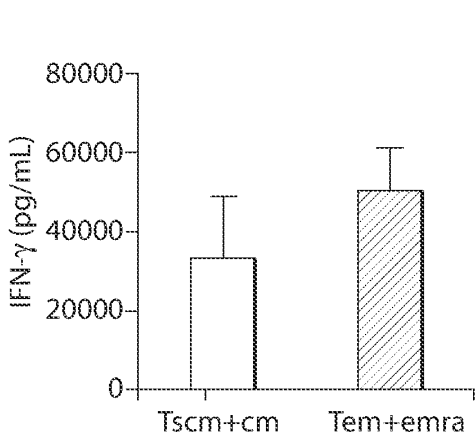


Fig. 6B

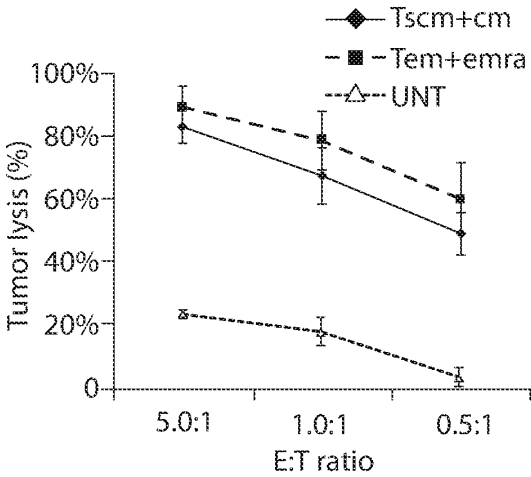


Fig. 6C

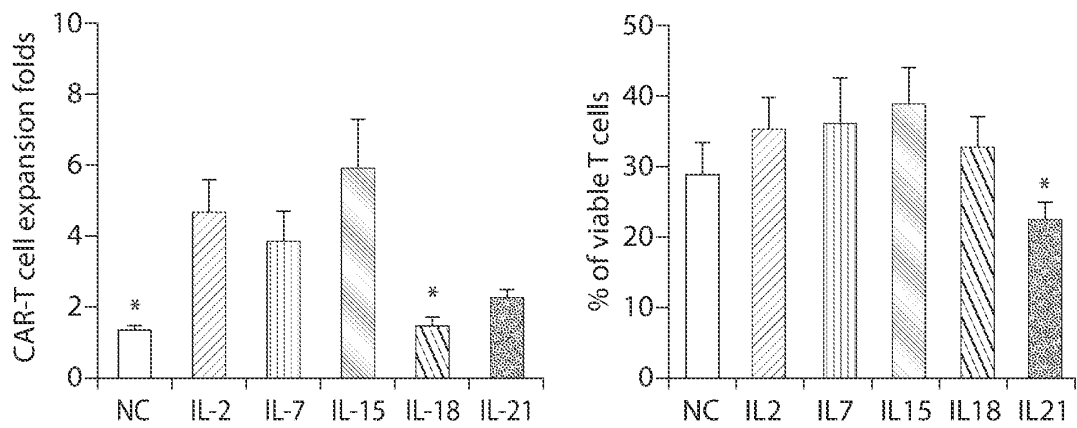


Fig. 7A

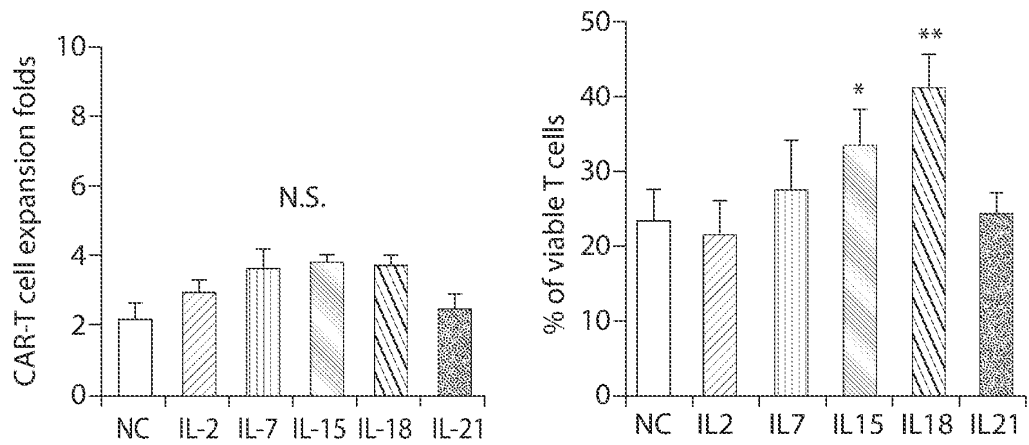


Fig. 7B

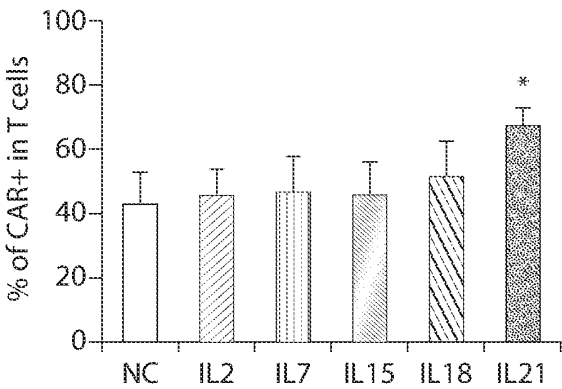


Fig. 7C

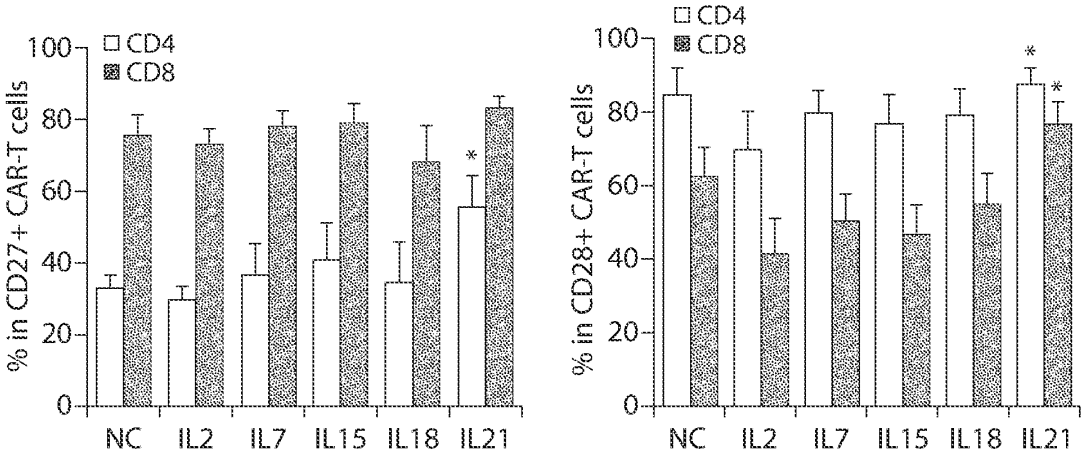


Fig. 7D

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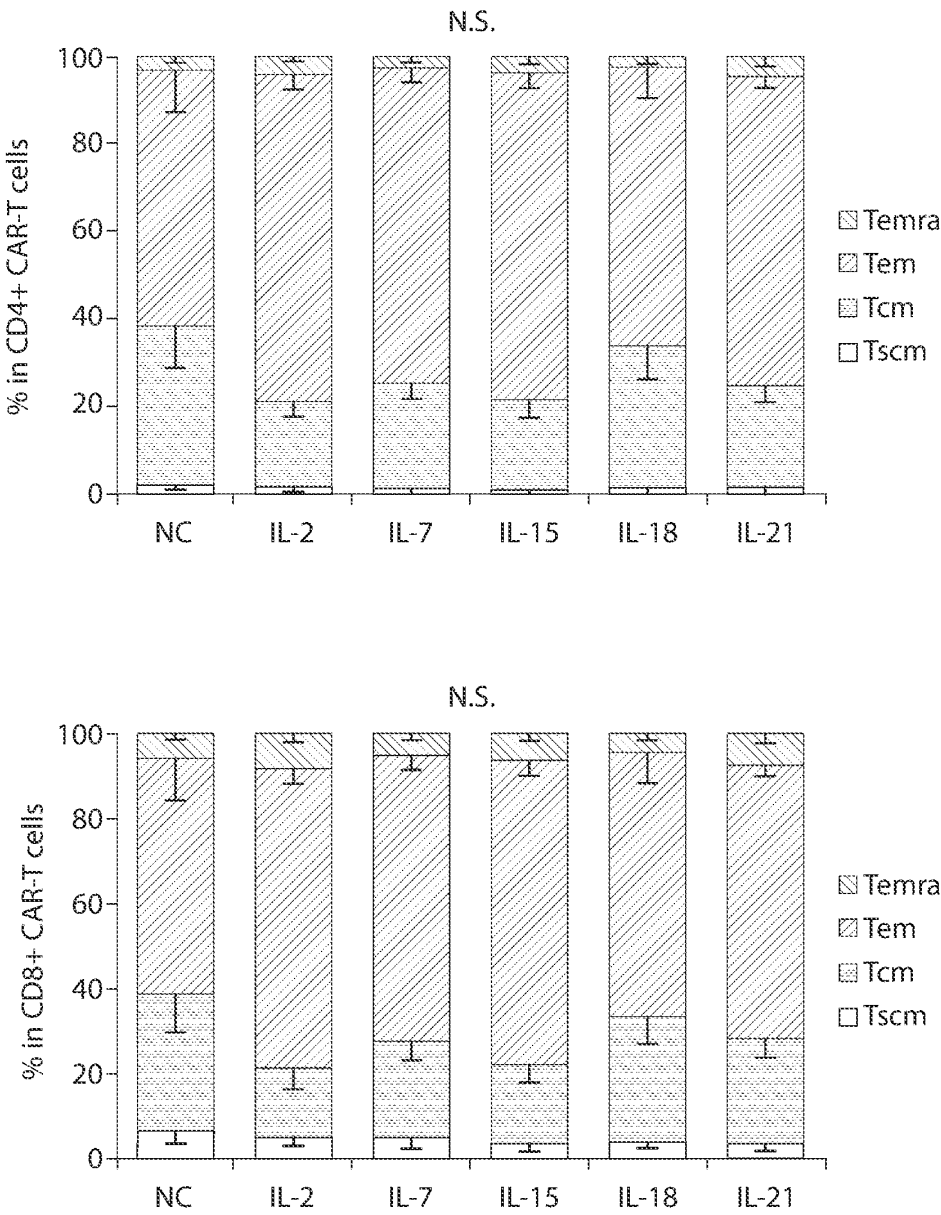


Fig. 7E

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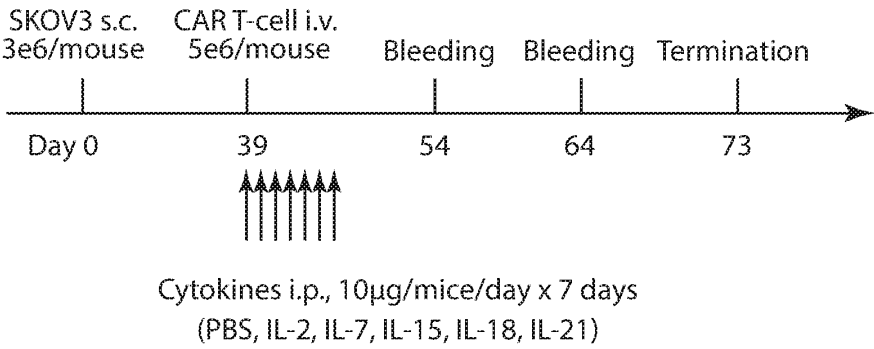


Fig. 8A

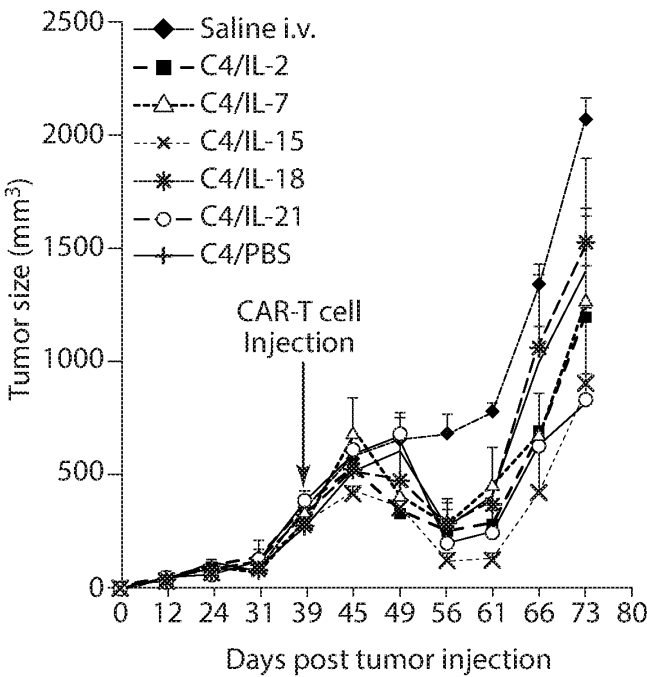


Fig. 8B

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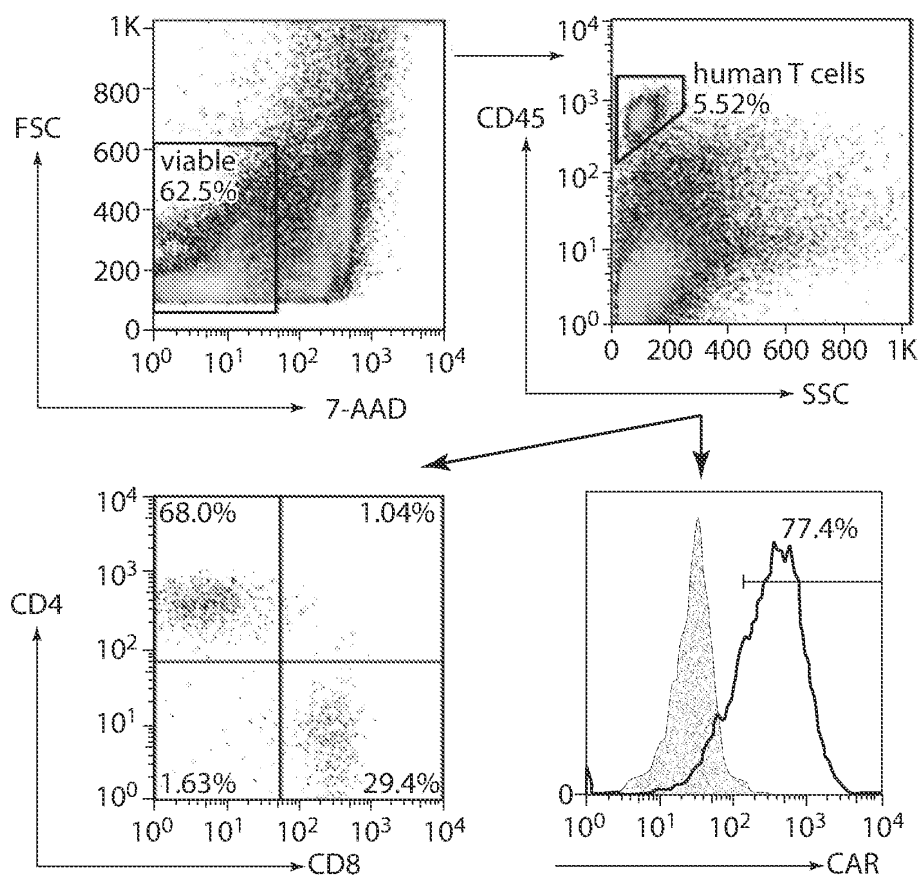


Fig. 8C

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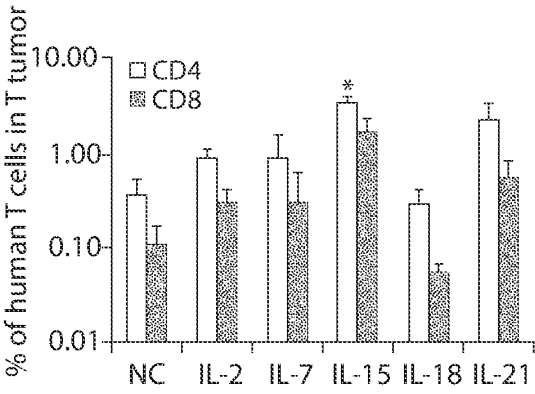


Fig. 8D

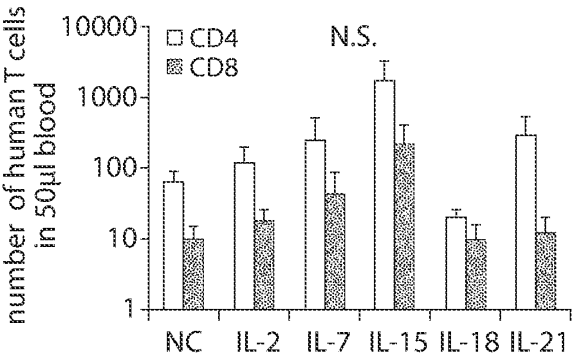


Fig. 8E

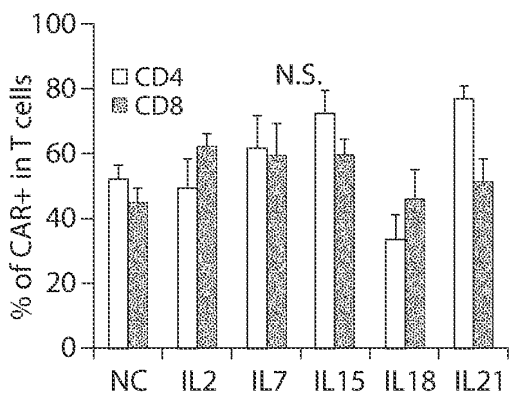


Fig. 8F

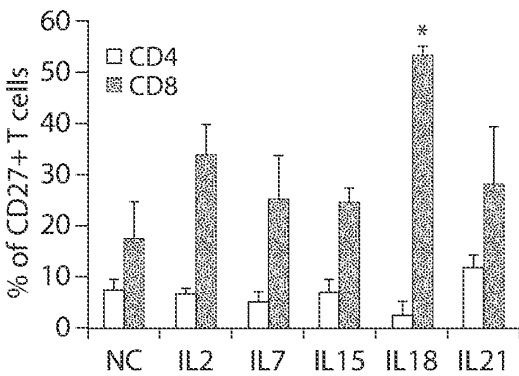
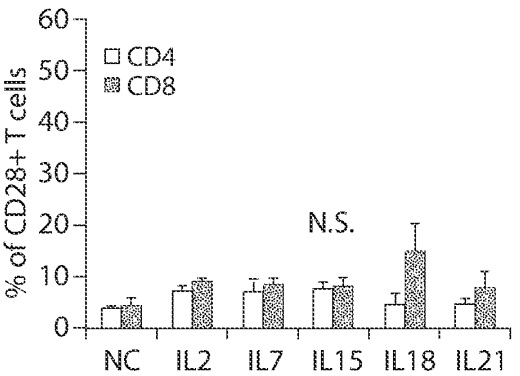


Fig. 8G

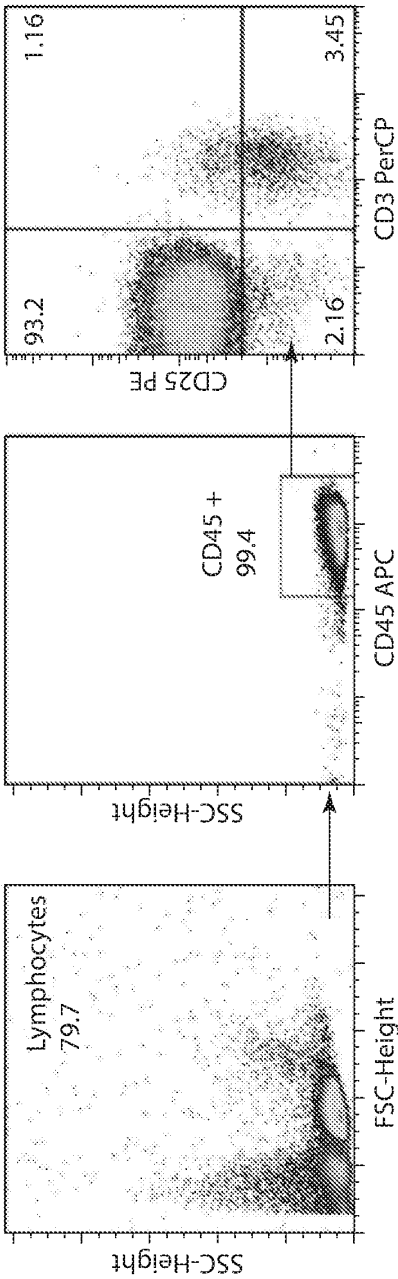


Fig. 9A

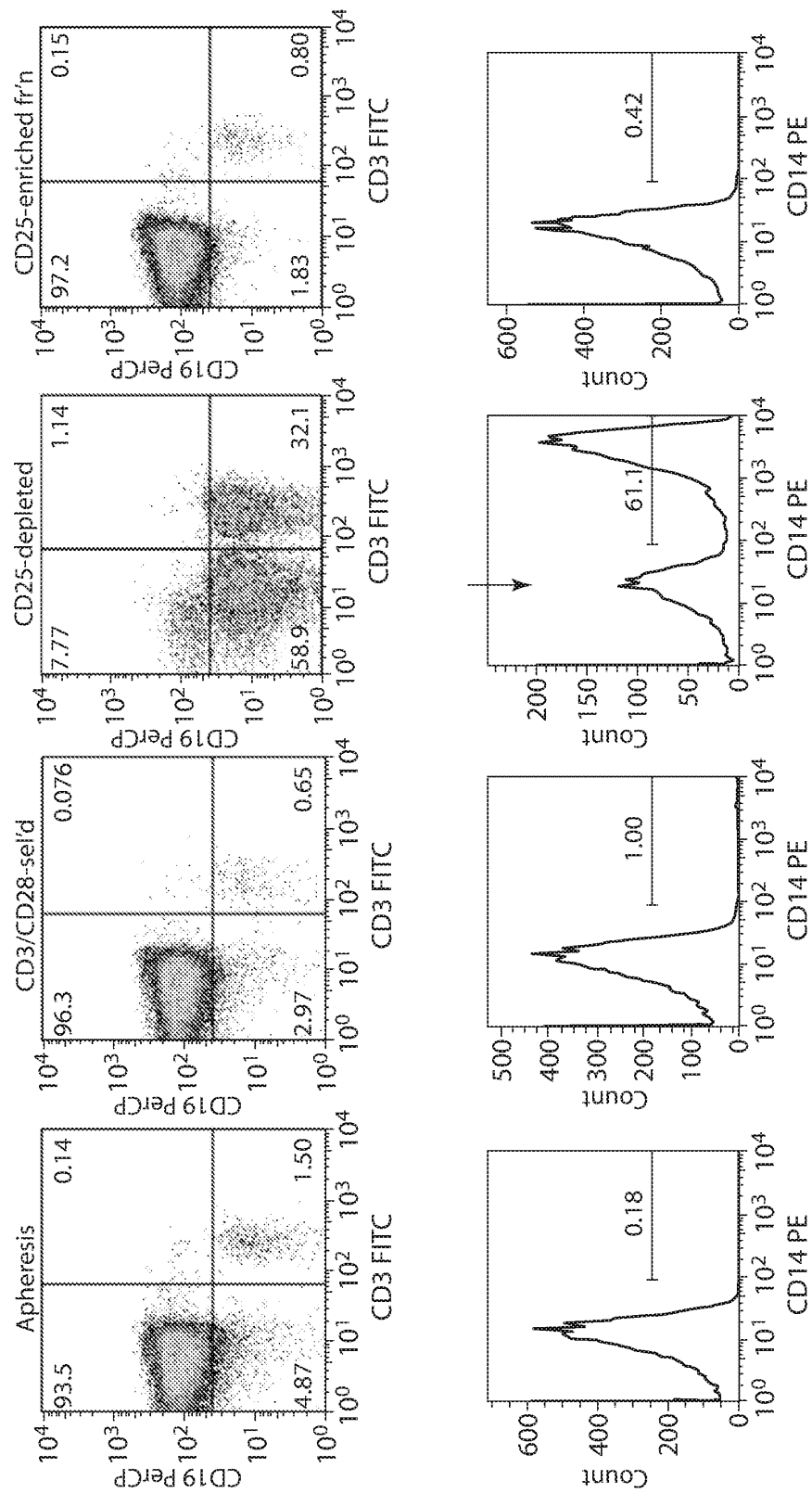


Fig. 9B

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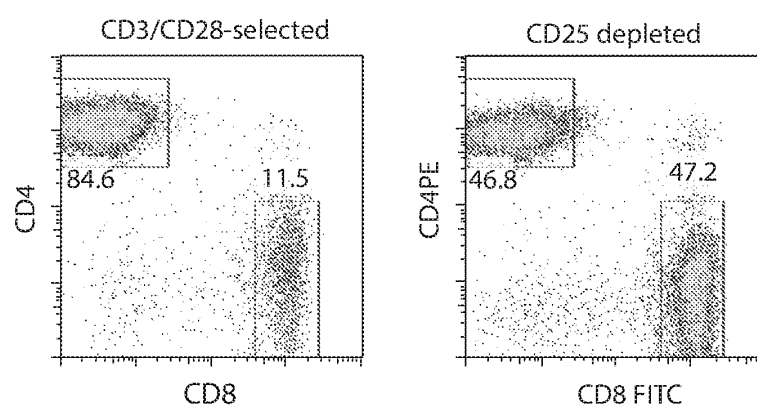


Fig. 10

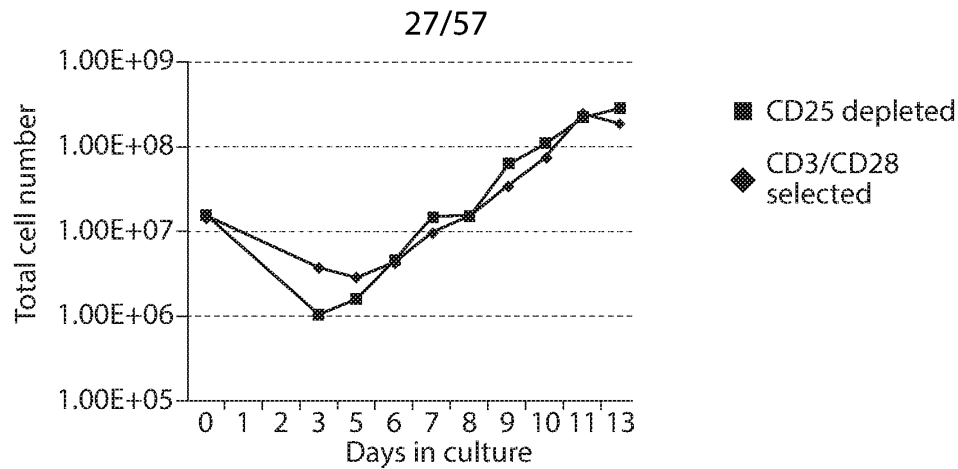


Fig. 11A

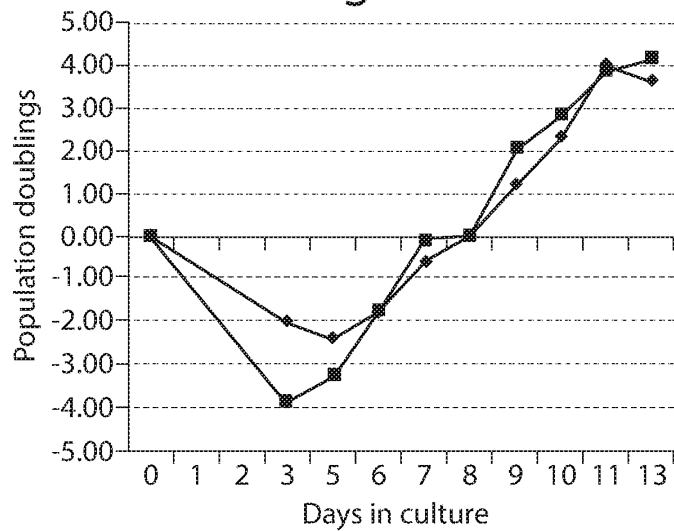


Fig. 11B

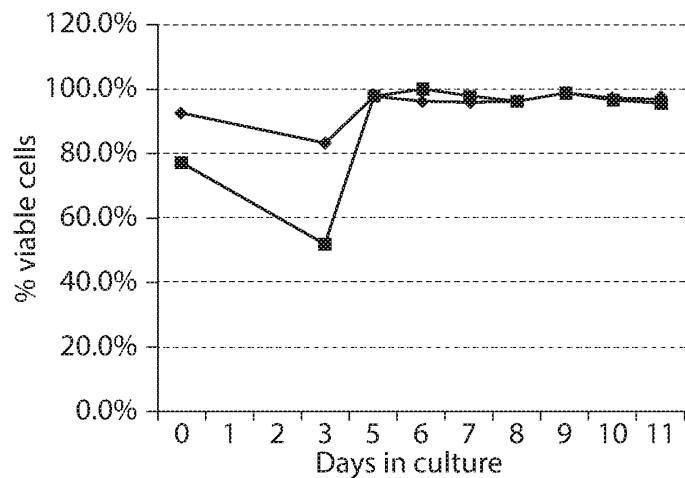


Fig. 11C

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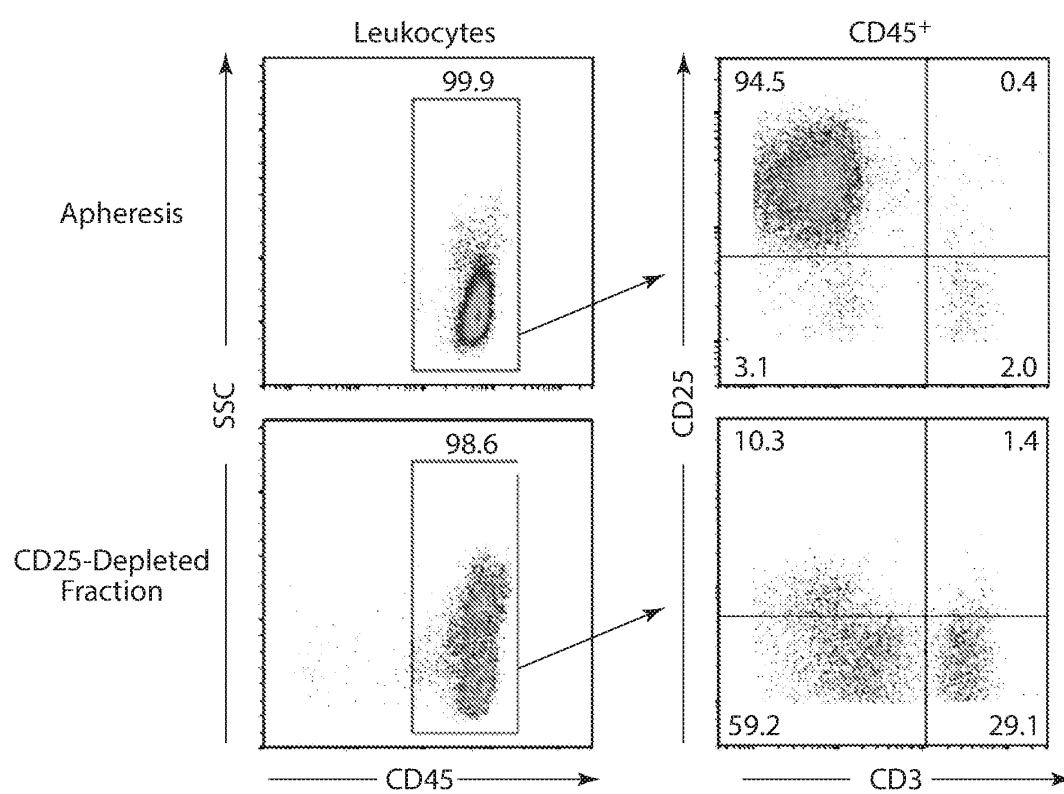


Fig. 12A

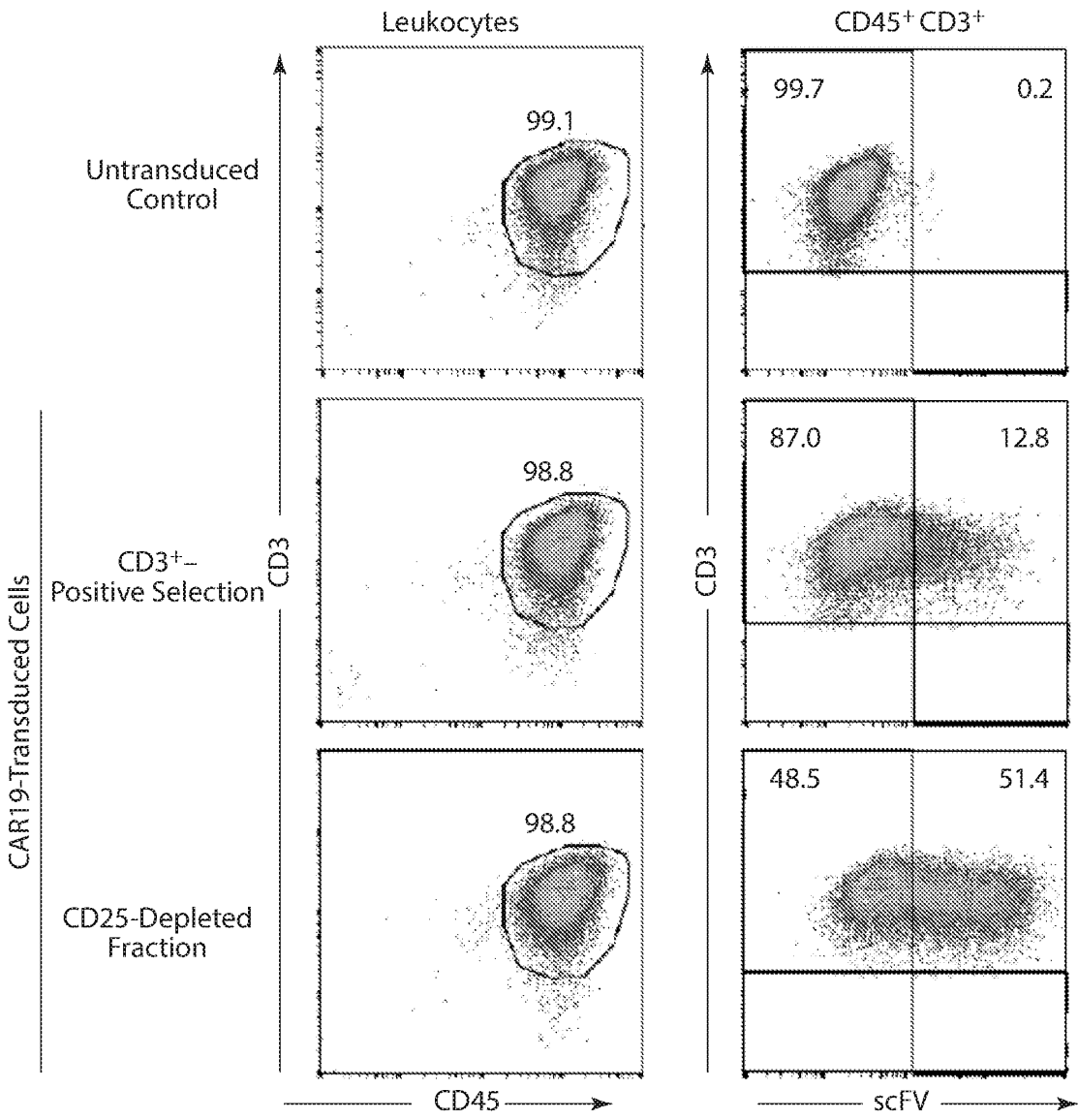


Fig. 12B

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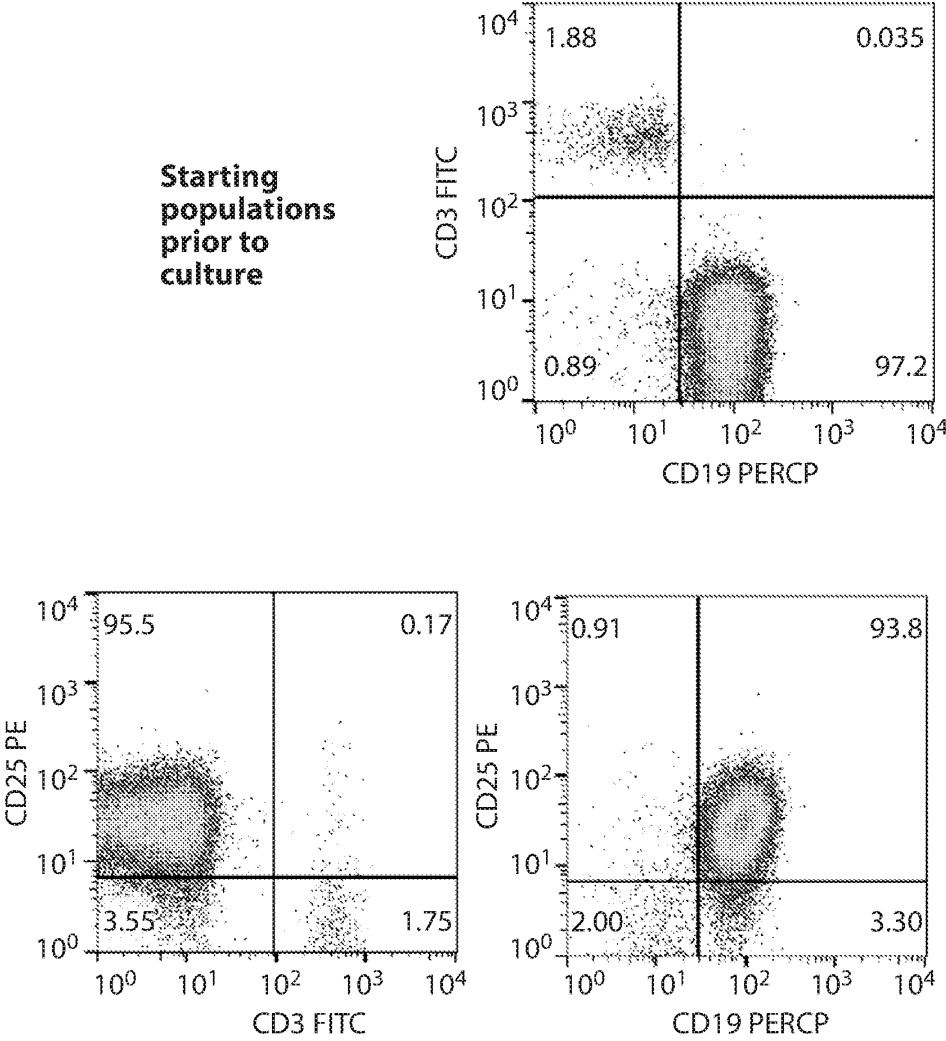


Fig. 13

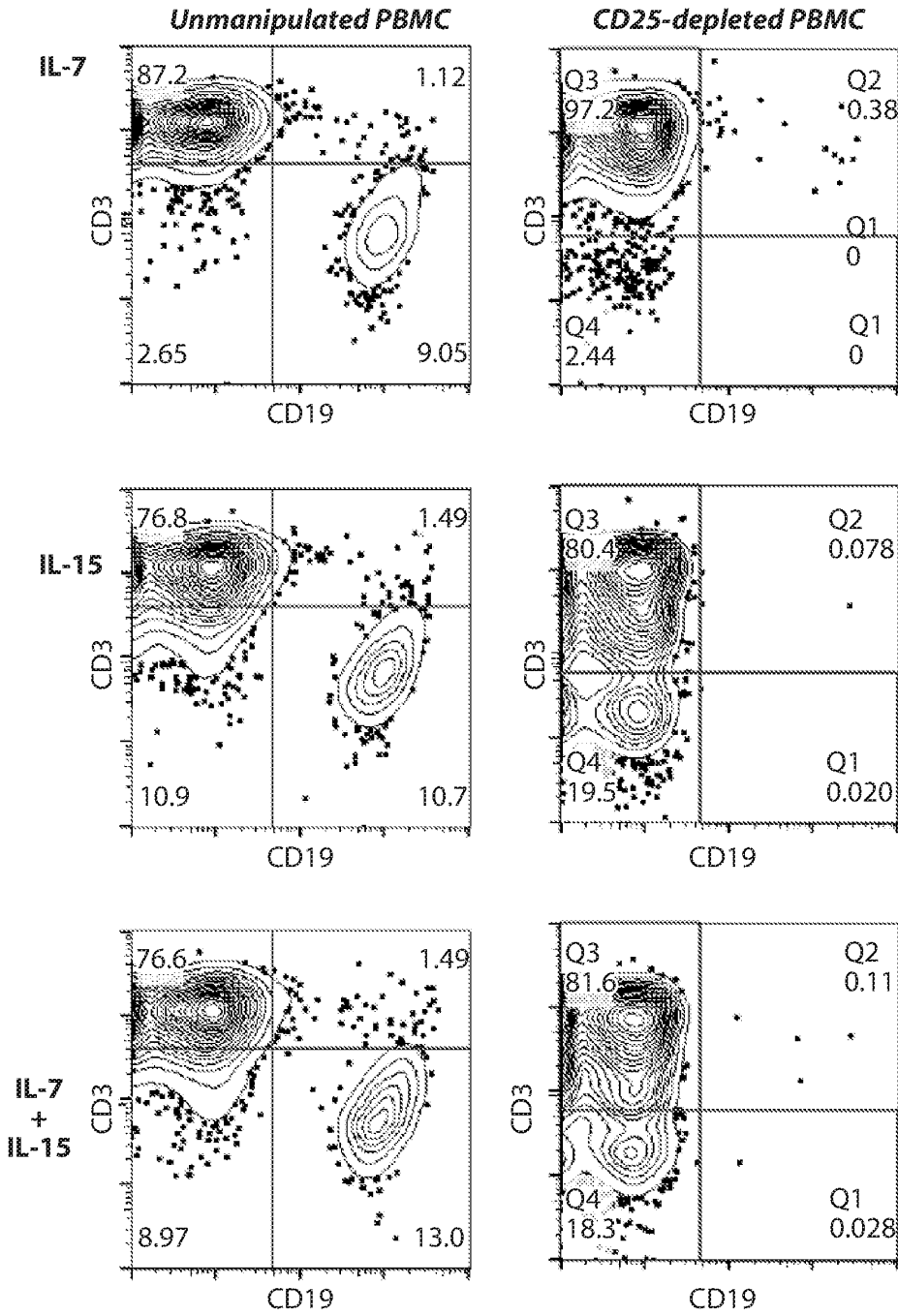


Fig. 14

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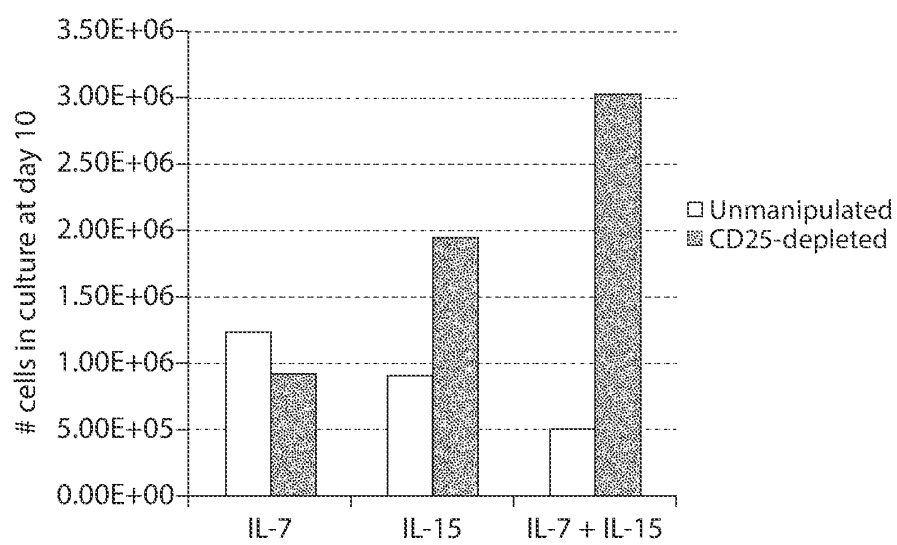


Fig. 15

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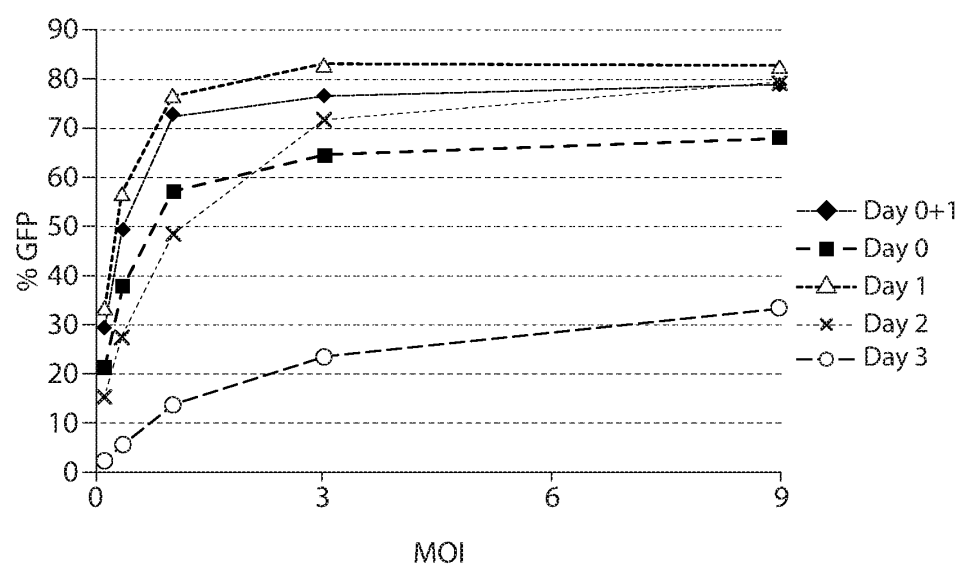


Fig. 16

ND447 PBMCs activated, transduced, de-beaded, and harvested at Day 5 and D9 for comparative performance in vitro and in vivo

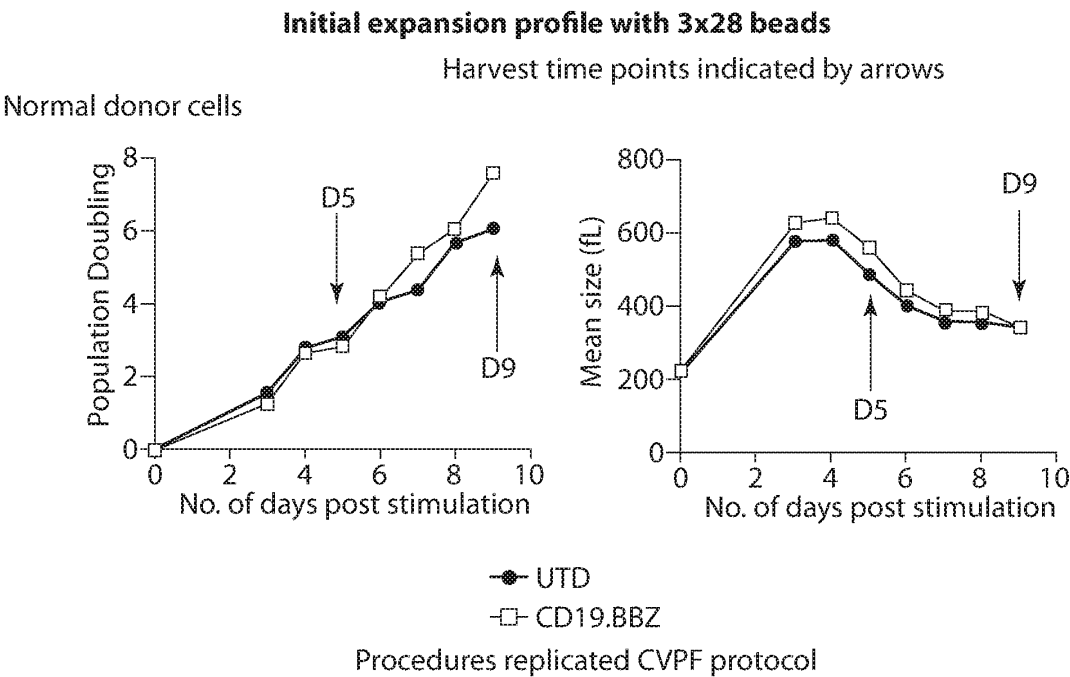


Fig. 17

There is no difference in CART19 cell killing from cells isolated at day 5 and day 9 from expansion

Cytotoxicity assay (18hr)

Target: K562-CD19

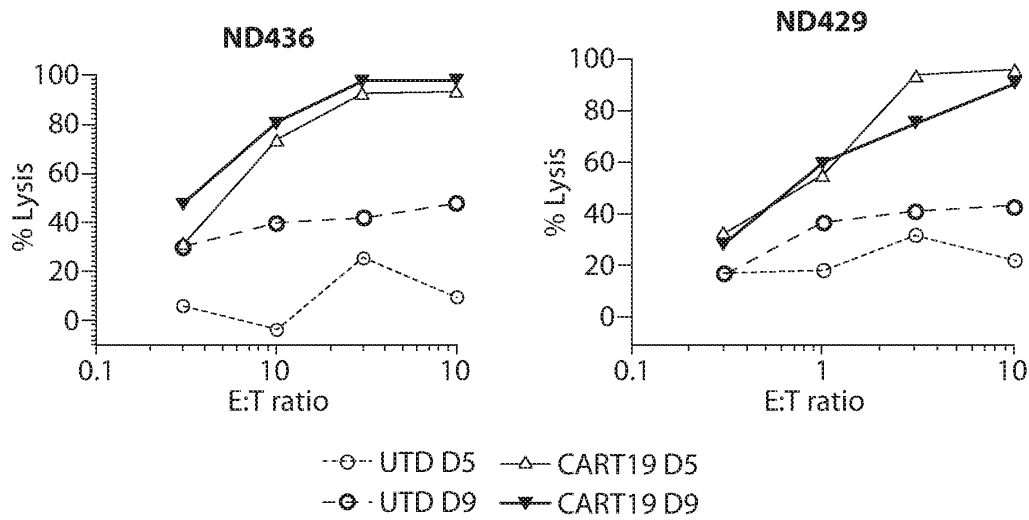


Fig. 18

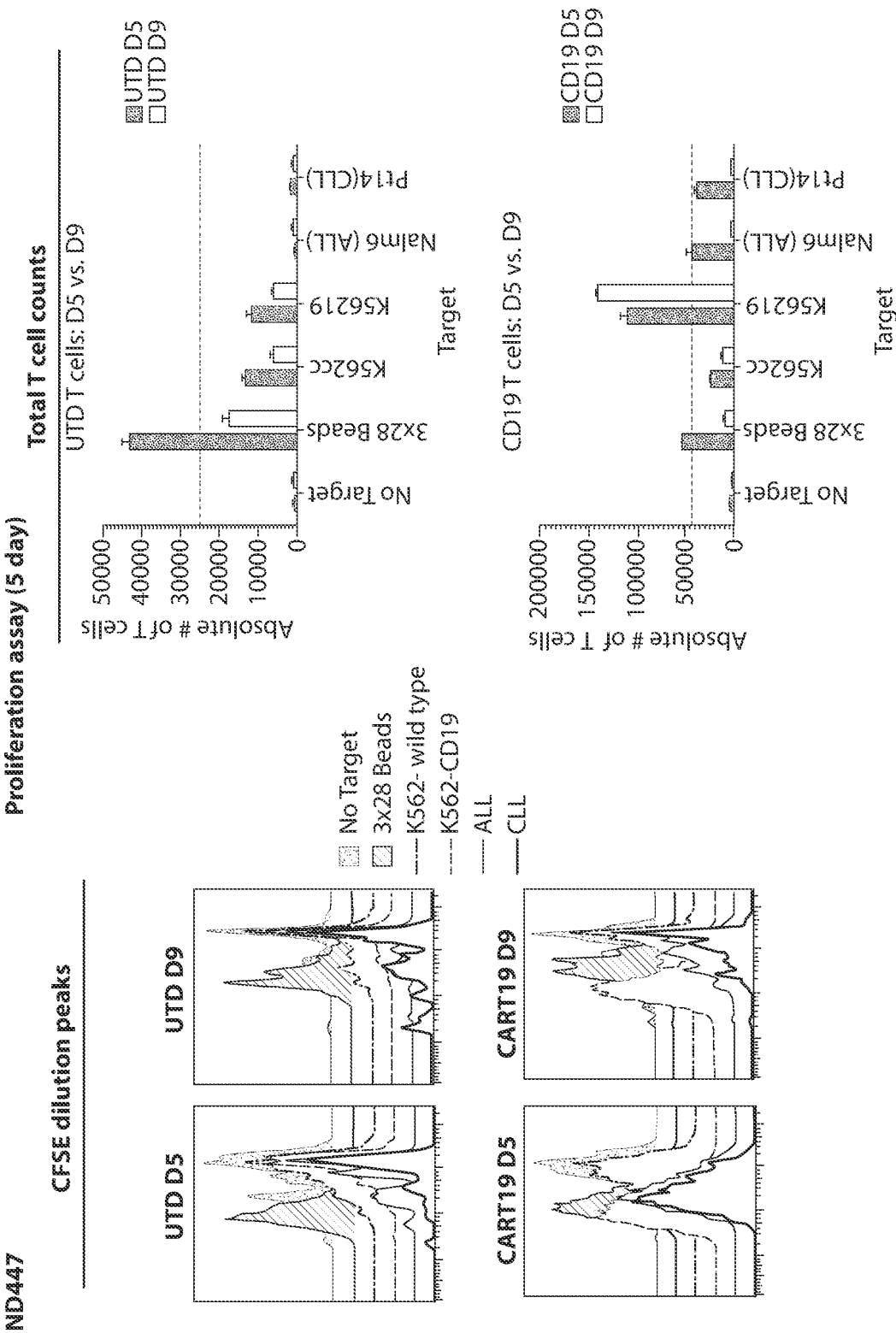


Fig. 19

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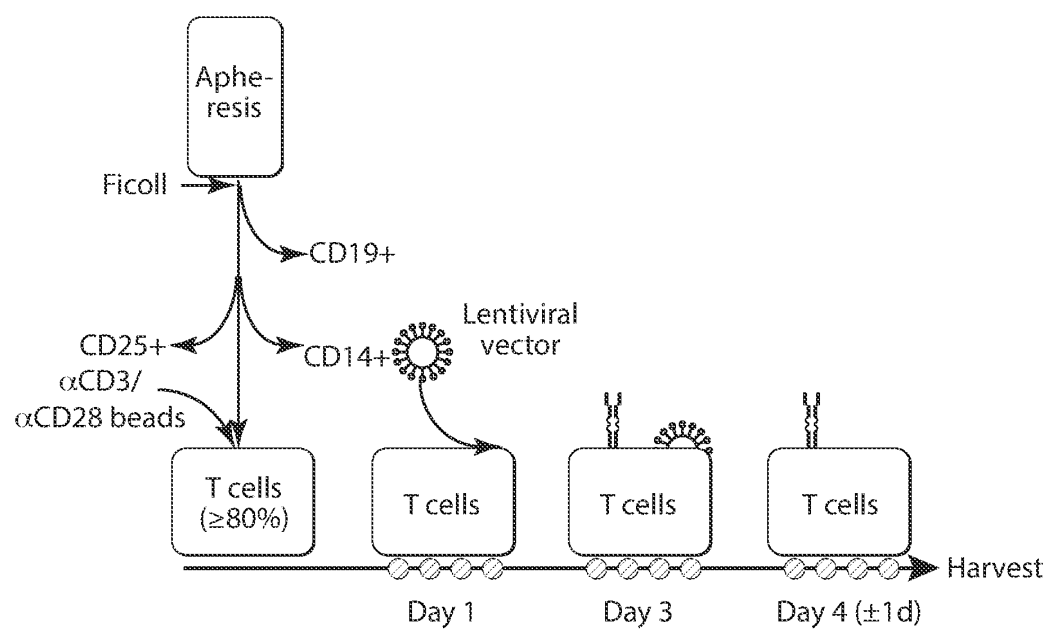


Fig. 20

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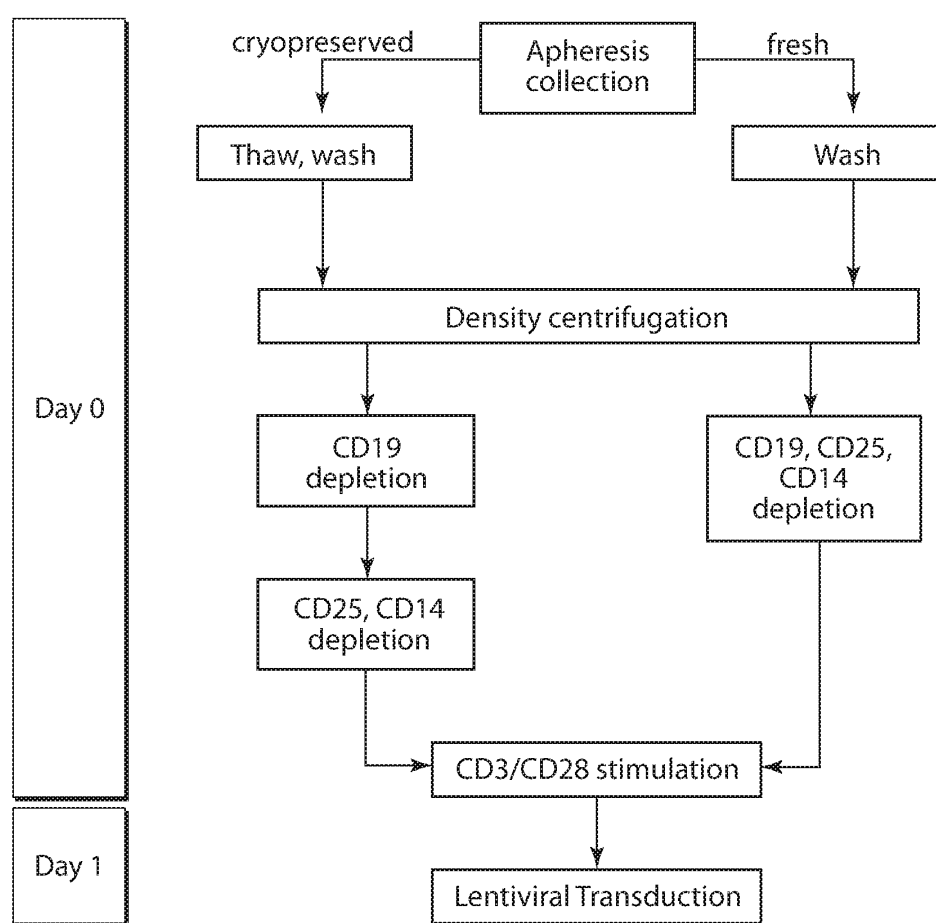


Fig. 21

Cells harvested on D5 proliferated better than cells harvested on D9 over 7 days of stimulation with K562s expressing CD19.

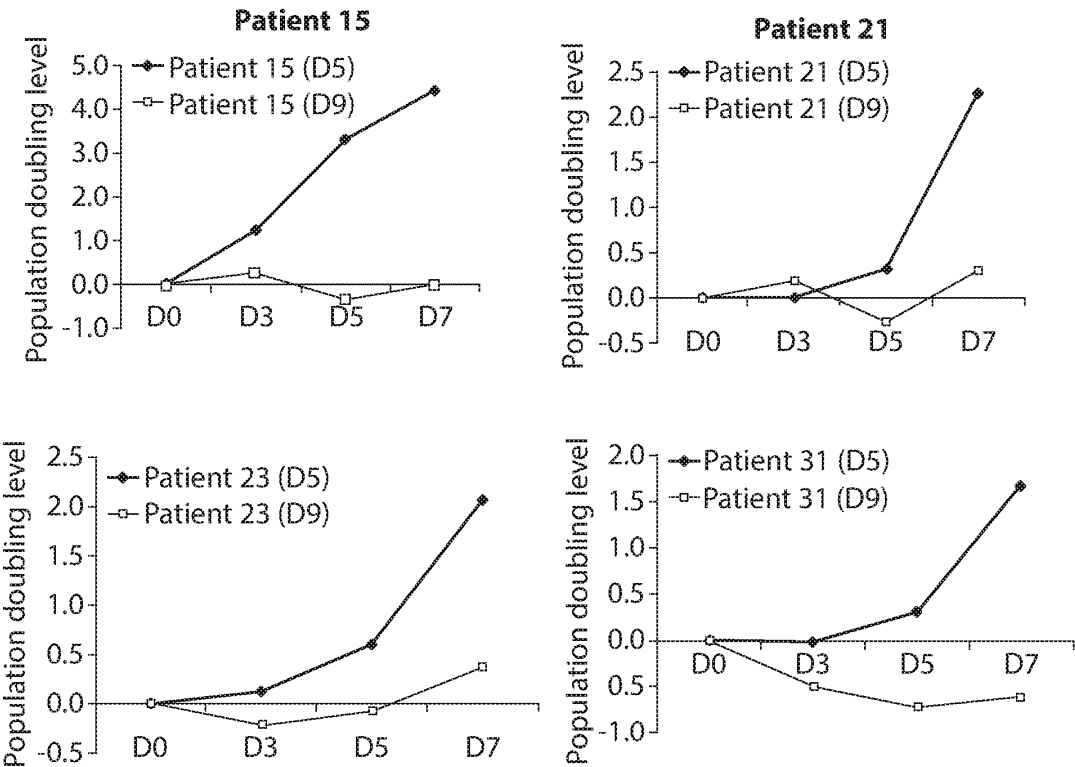


Fig. 22

Higher or comparable cytokine production from CART19 cells harvested at D5 upon recognition of targets

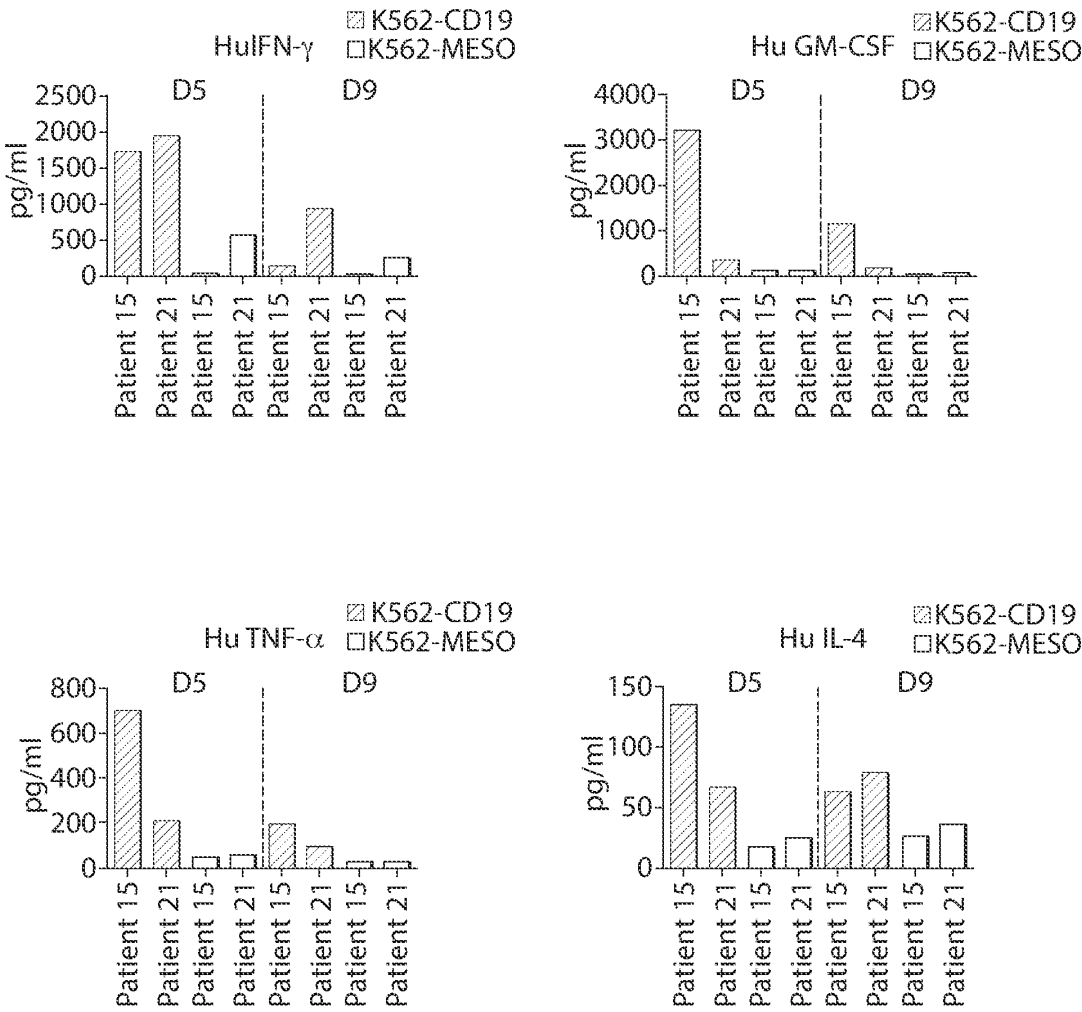
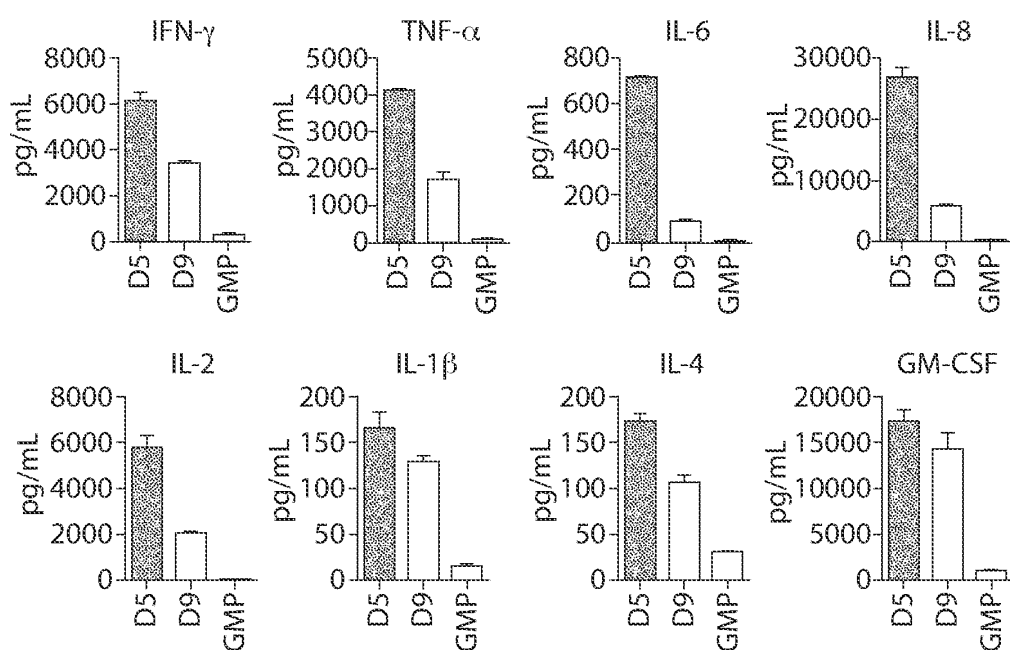


Fig. 23

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**Increased levels of multiple cytokines are produced in CART19 cells
harvested at day 5 upon recognition of targets**

ALL pt. ID 04



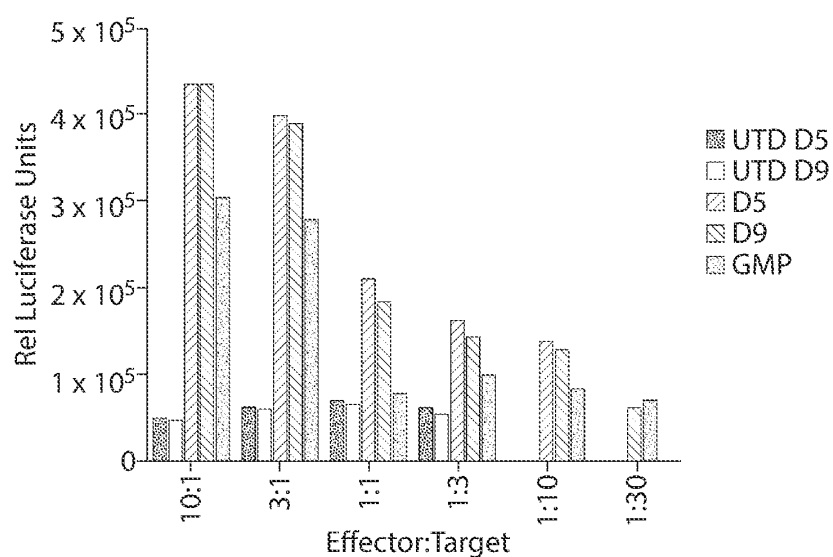
- CART19 cells were stimulated with anti-CAR19-idiotype-Ab-coated or control beads for 24h.
- No cytokine or low levels (<200 pg/ml) of cytokine were detected with control beads.

Fig. 24

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CART19 cells harvested at day 5 possess a better cell-killing capacity

**Cell Killing Assay CART19 cells
(ALL pt. ID 04)**



- CART19 cells were co-cultured with NALM6-Luc cells at increasing E:T ratios for 16h.
- Total cell lysates were examined by luciferase assay.

Fig. 25

CART19 cells harvested at day 5 possess a better **in vivo** long-term cell-killing capacity

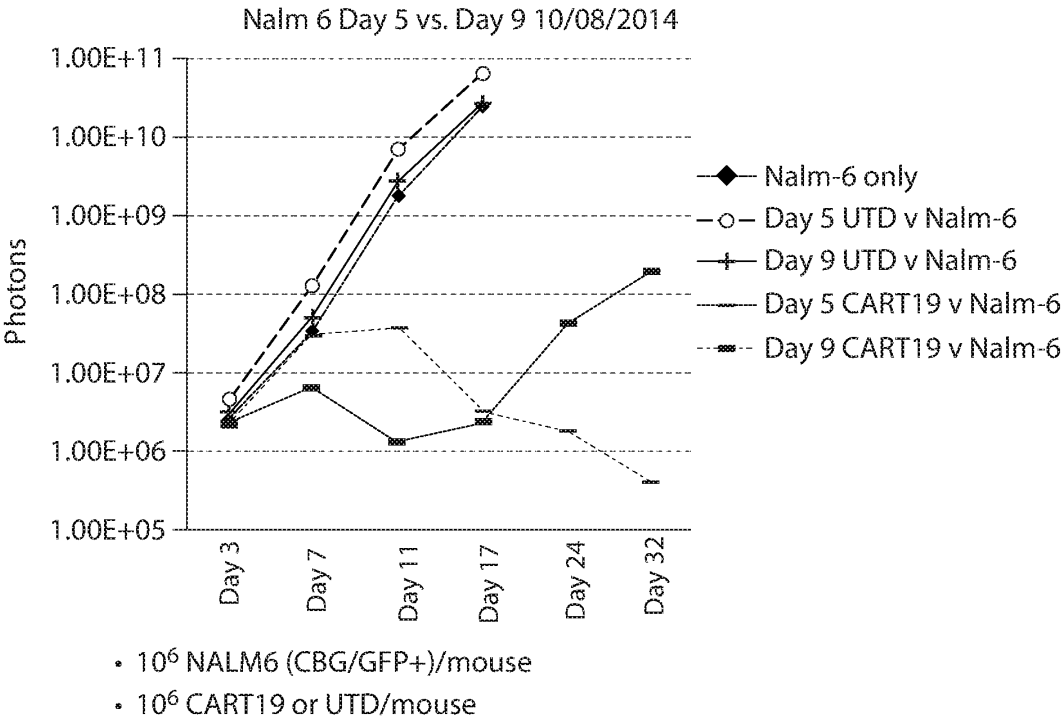


Fig. 26

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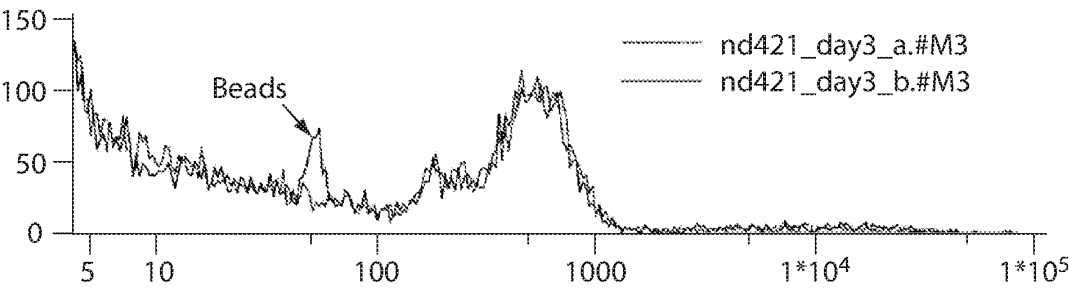


Fig. 27A

bead removal	Day 2 e6	Day 3 e6	Day 4 e6	Day 5 e6	Day 6 e6
Before	1.5	3	1.1	1.78	0.72
After	1.45	3	1.2	1.8	0.84

Fig. 27B

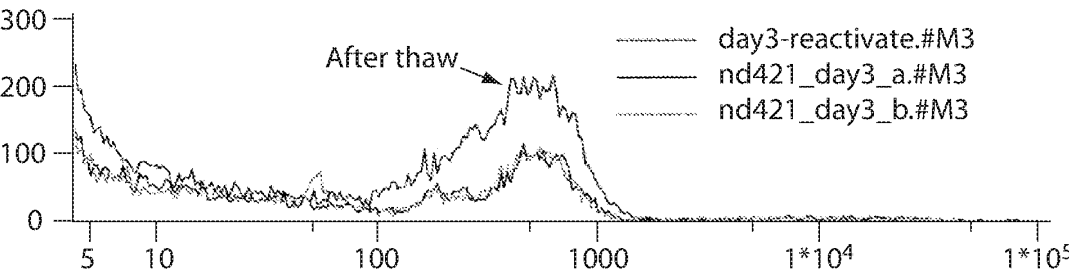


Fig. 27C

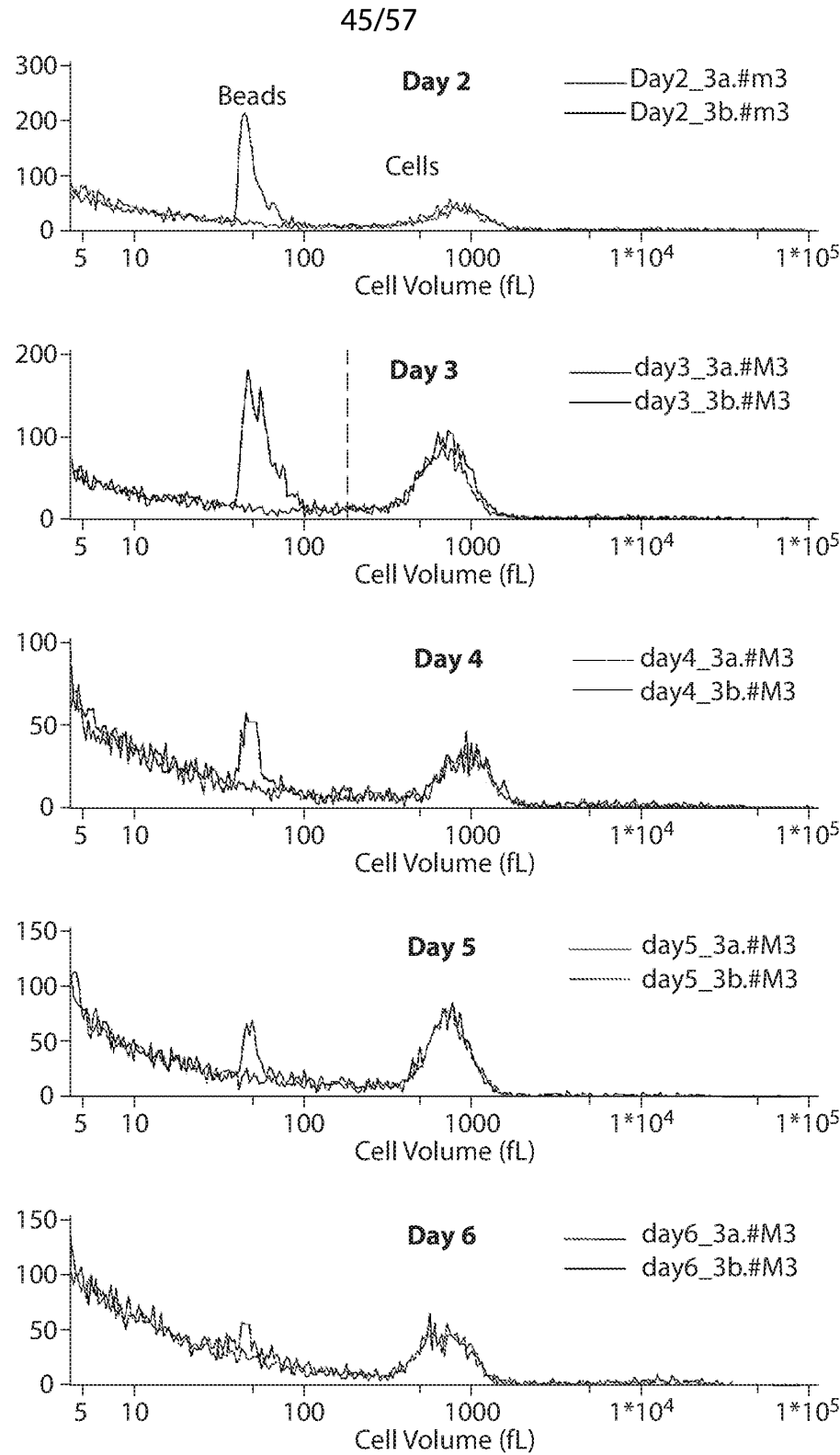


Fig. 27D

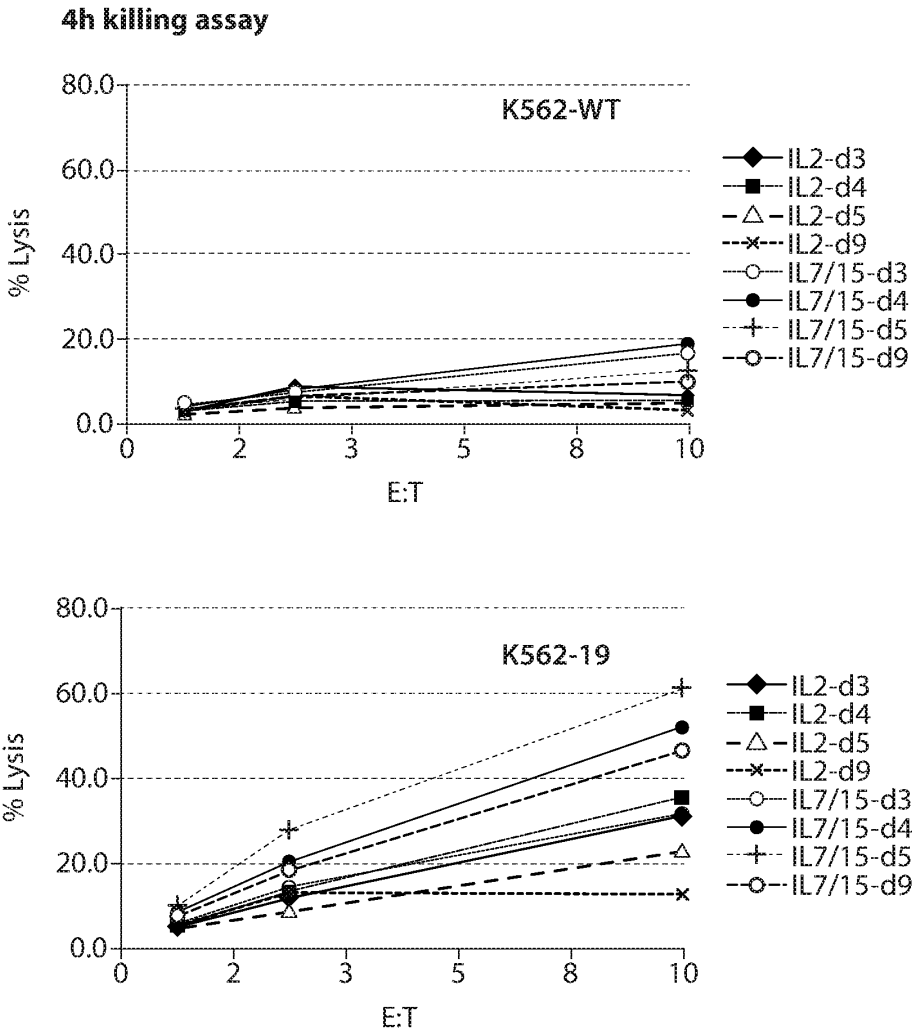


Fig. 28A

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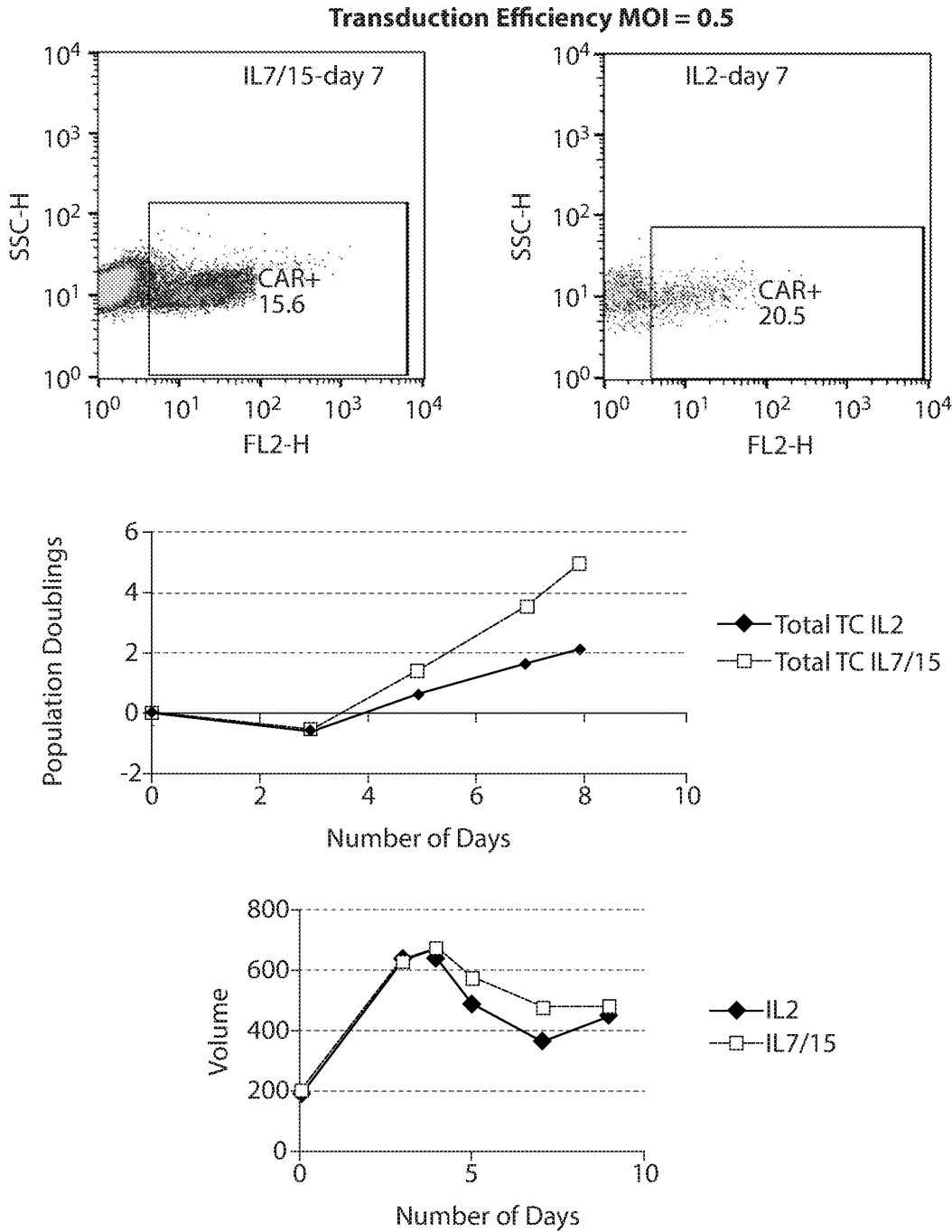


Fig. 28B

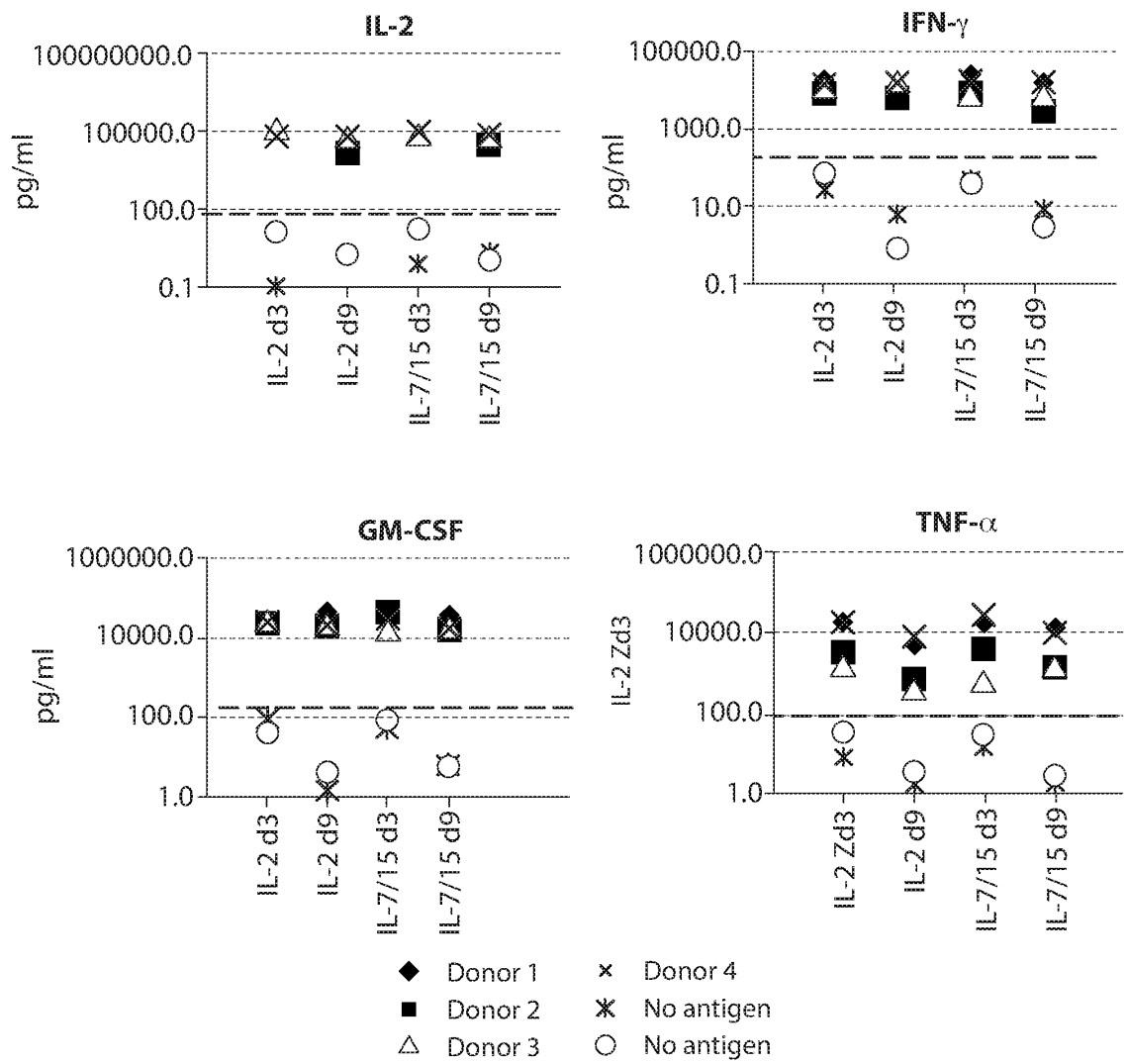


Fig. 29A

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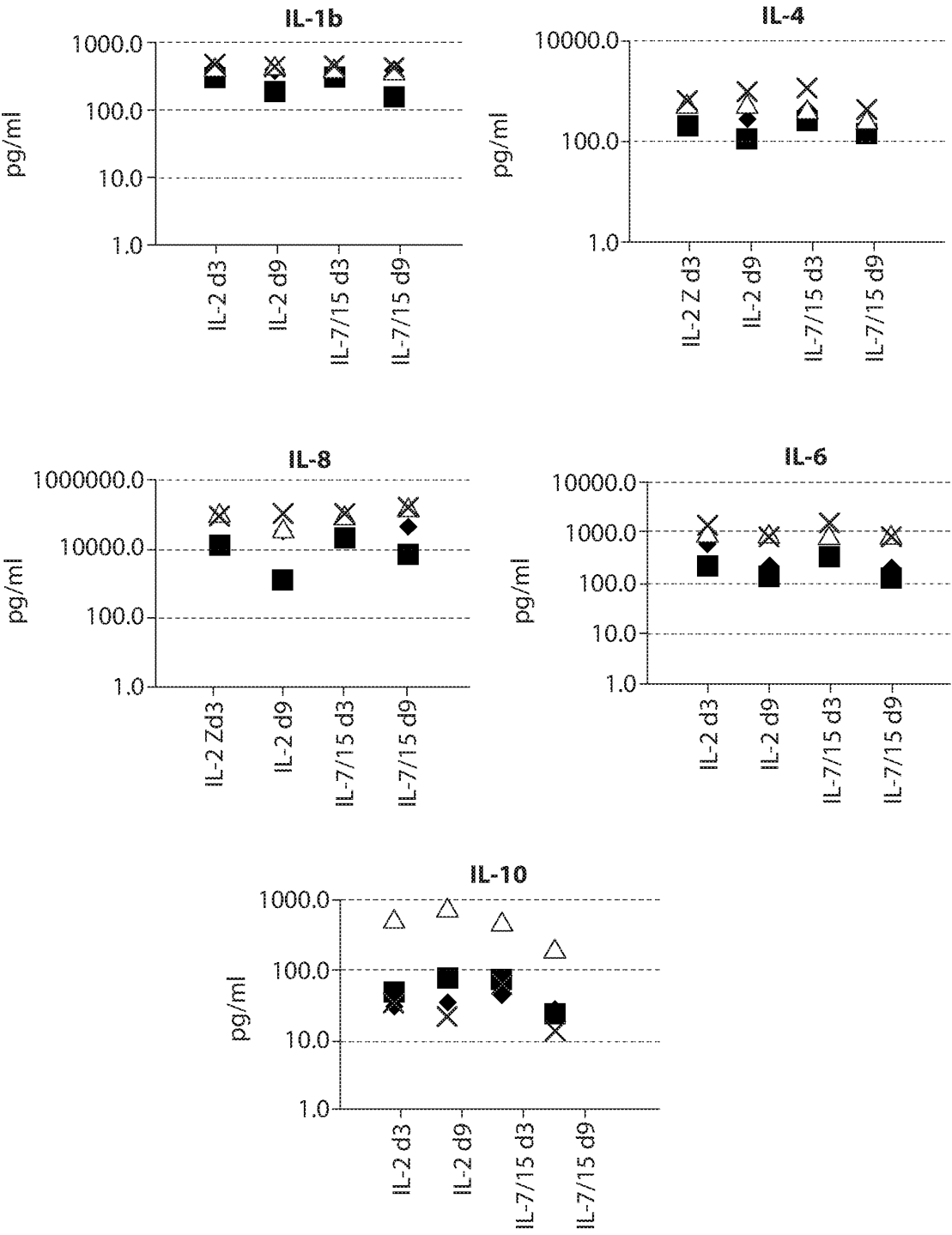


Fig. 29B

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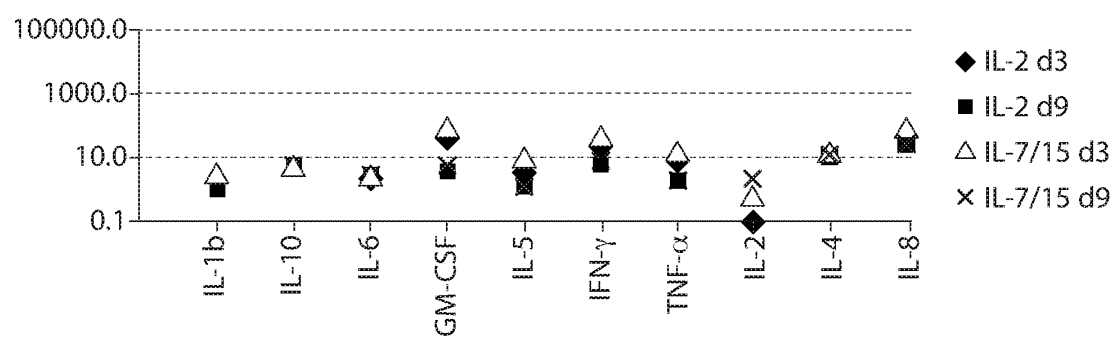


Fig. 29C

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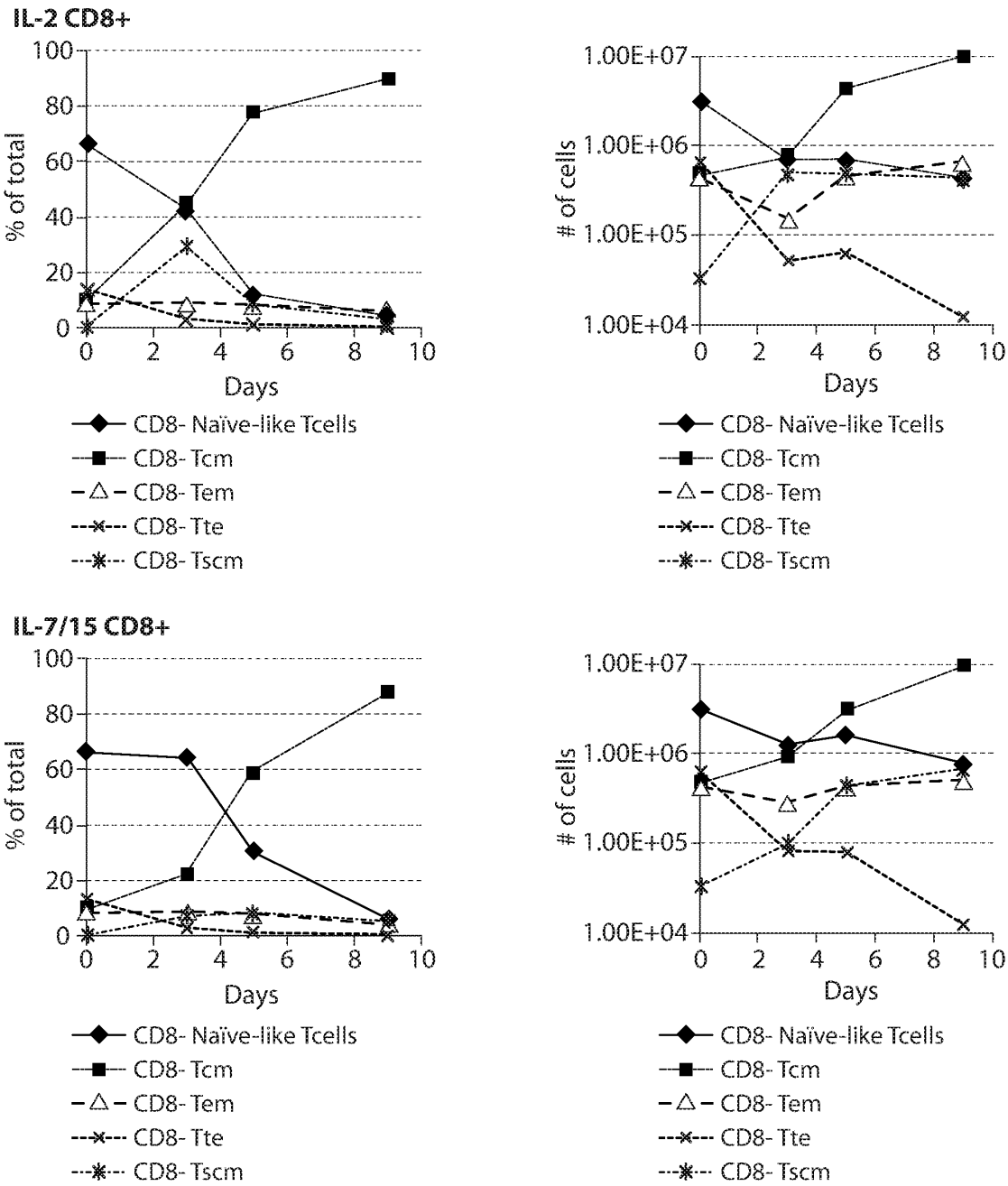


Fig. 30B

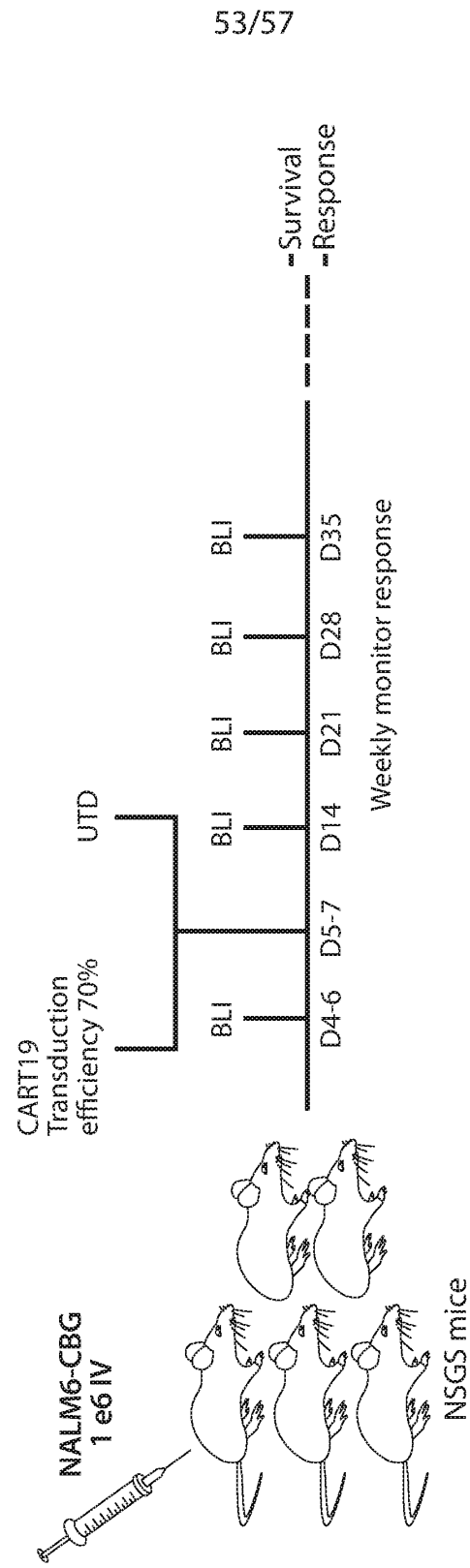


FIG. 31A

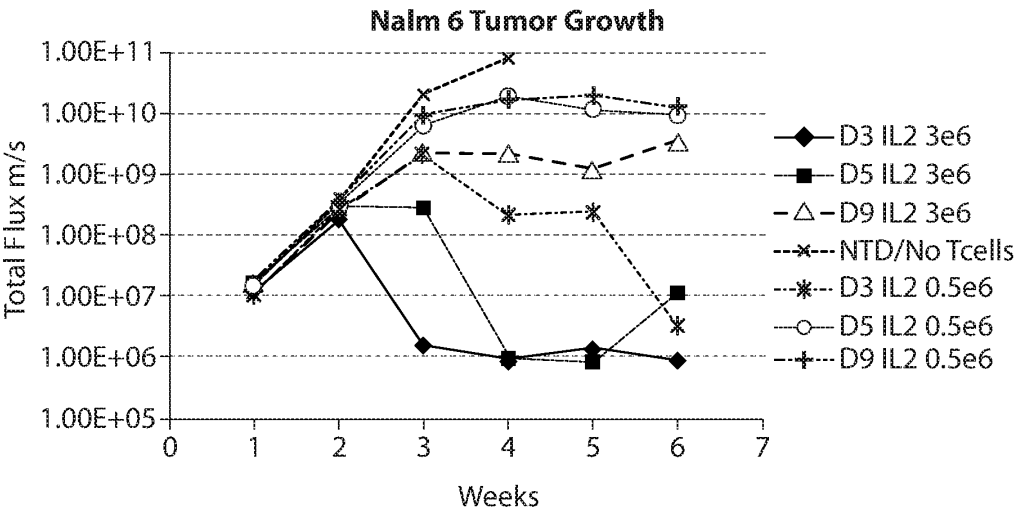


Fig. 31B

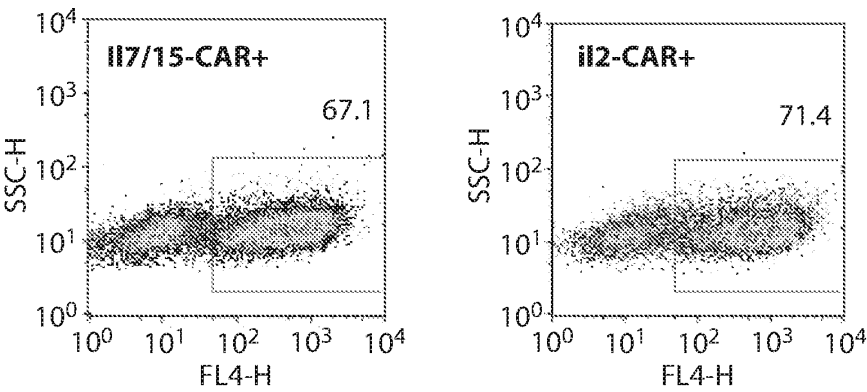


Fig. 31C

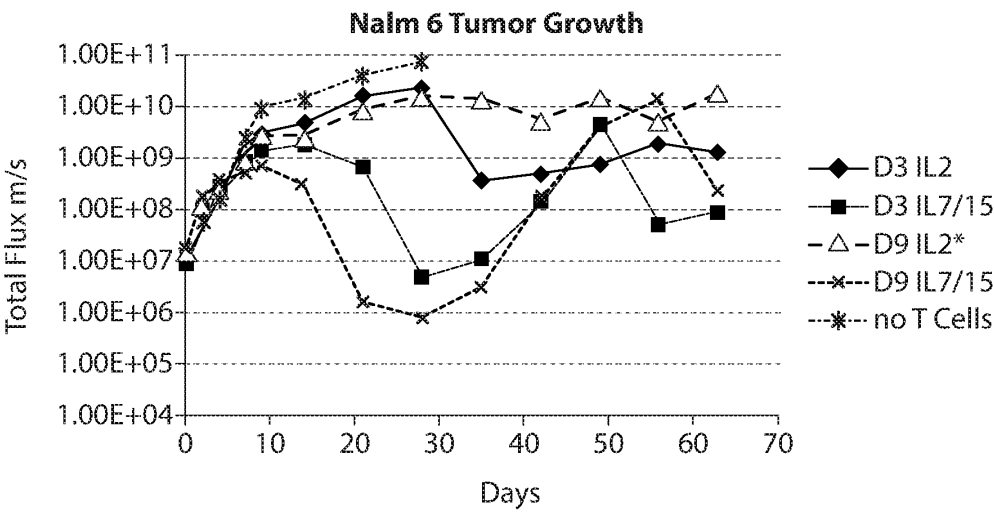


Fig. 31D

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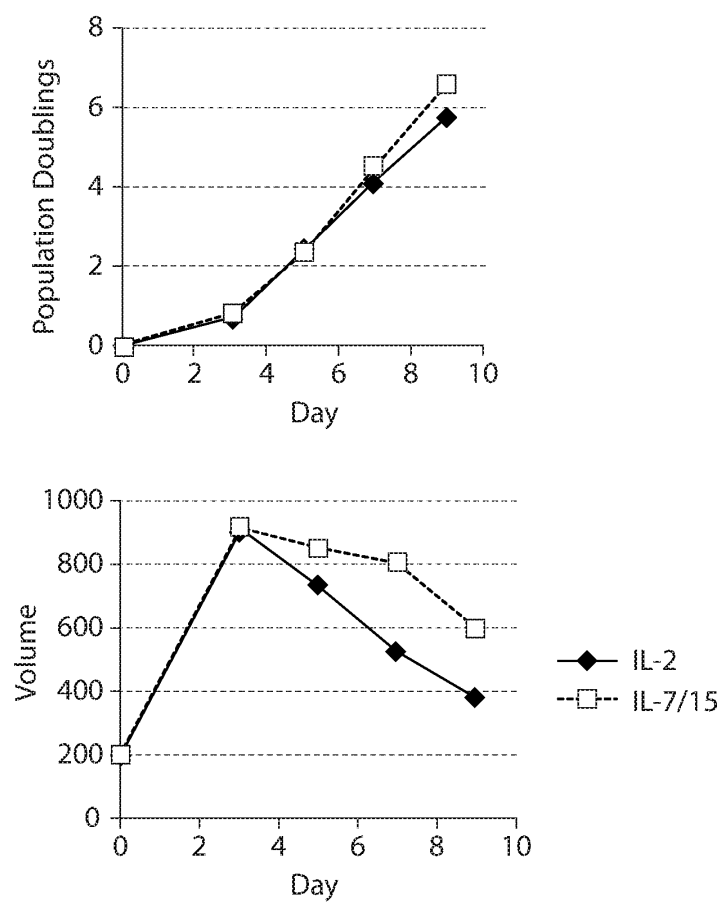


Fig. 32

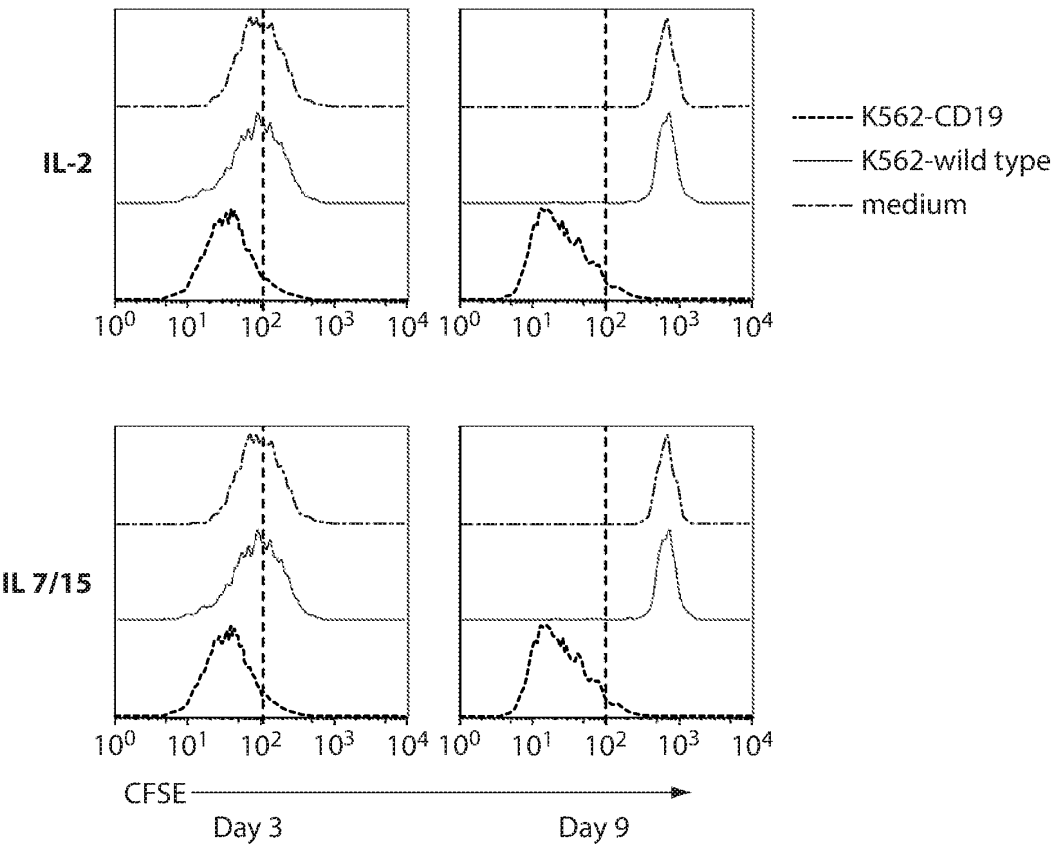


Fig. 33