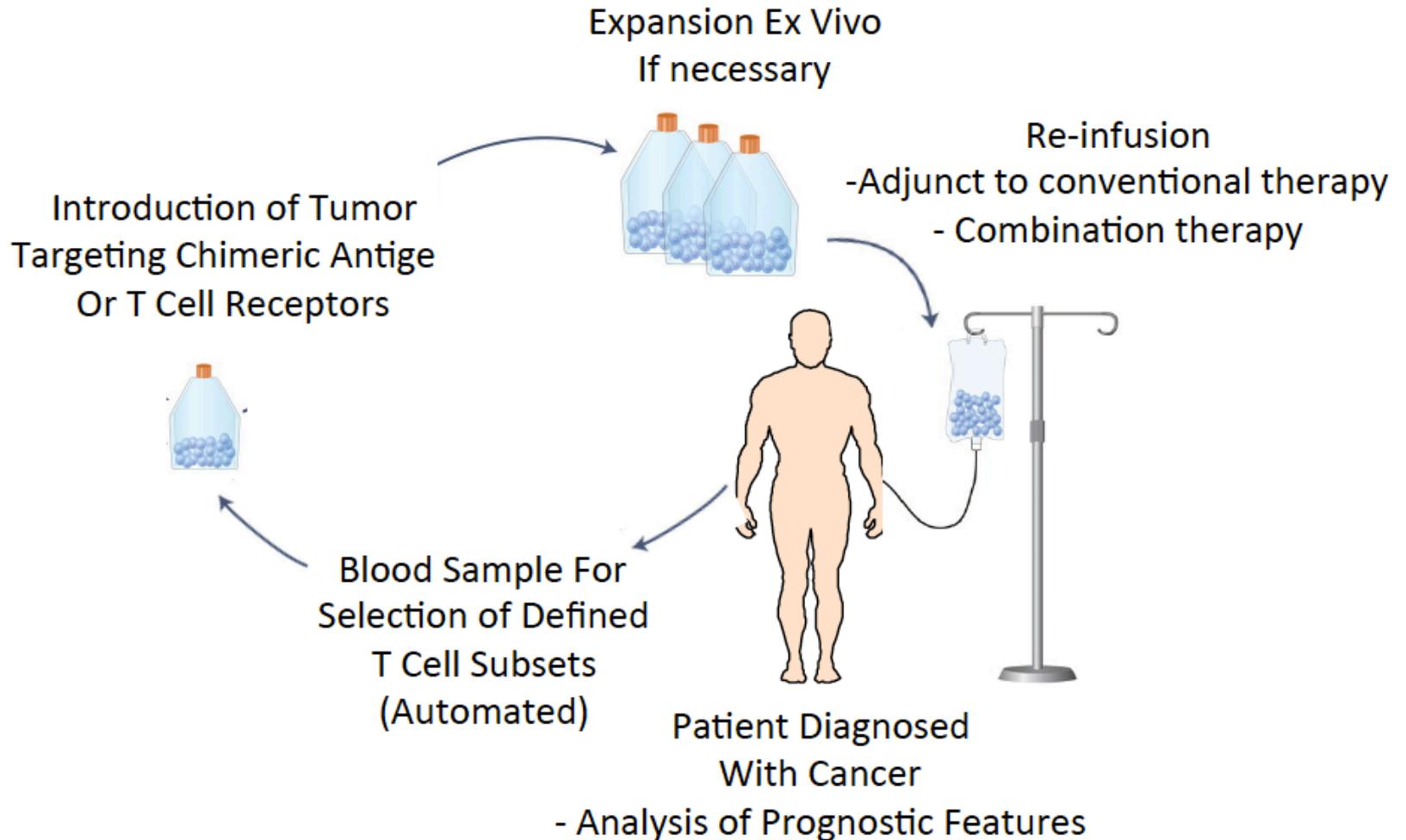
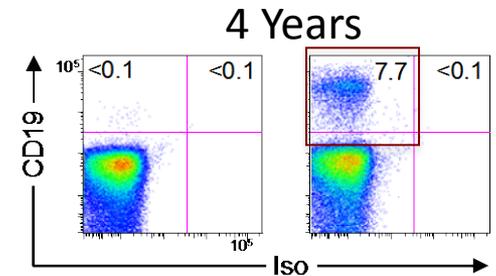
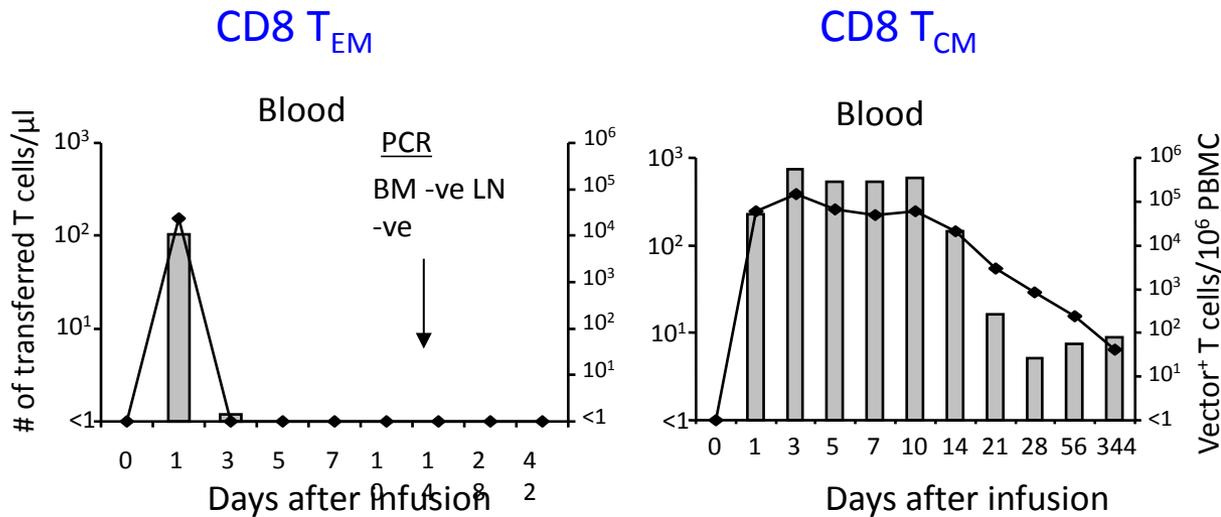
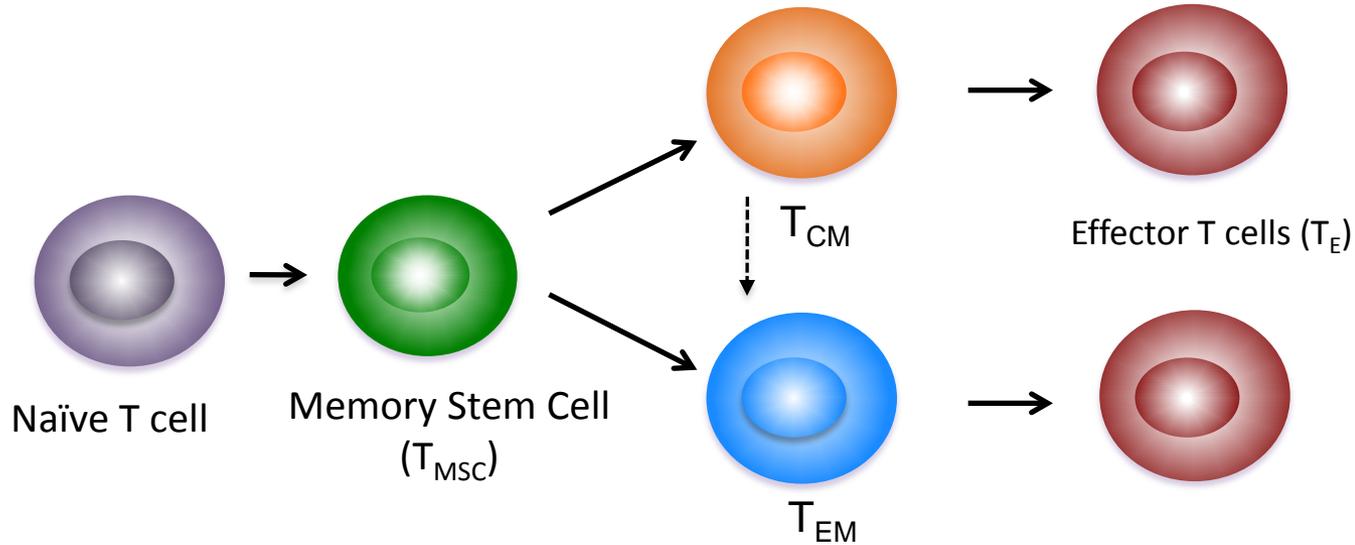


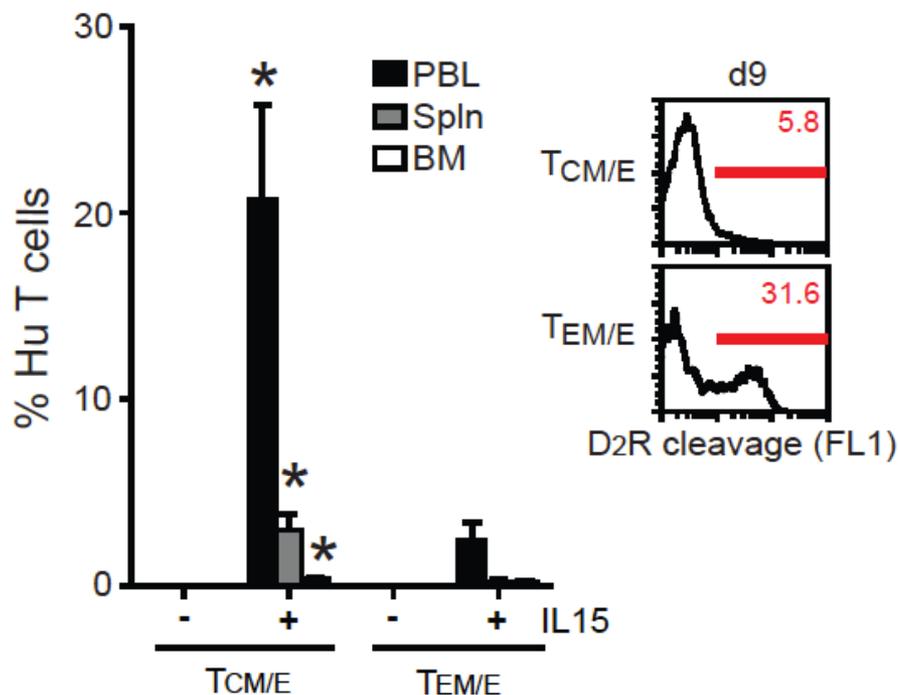
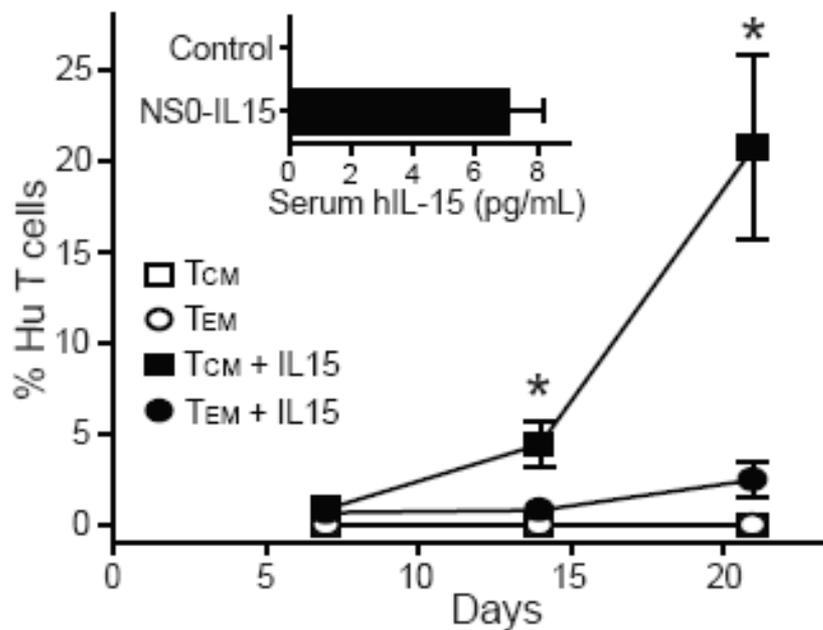
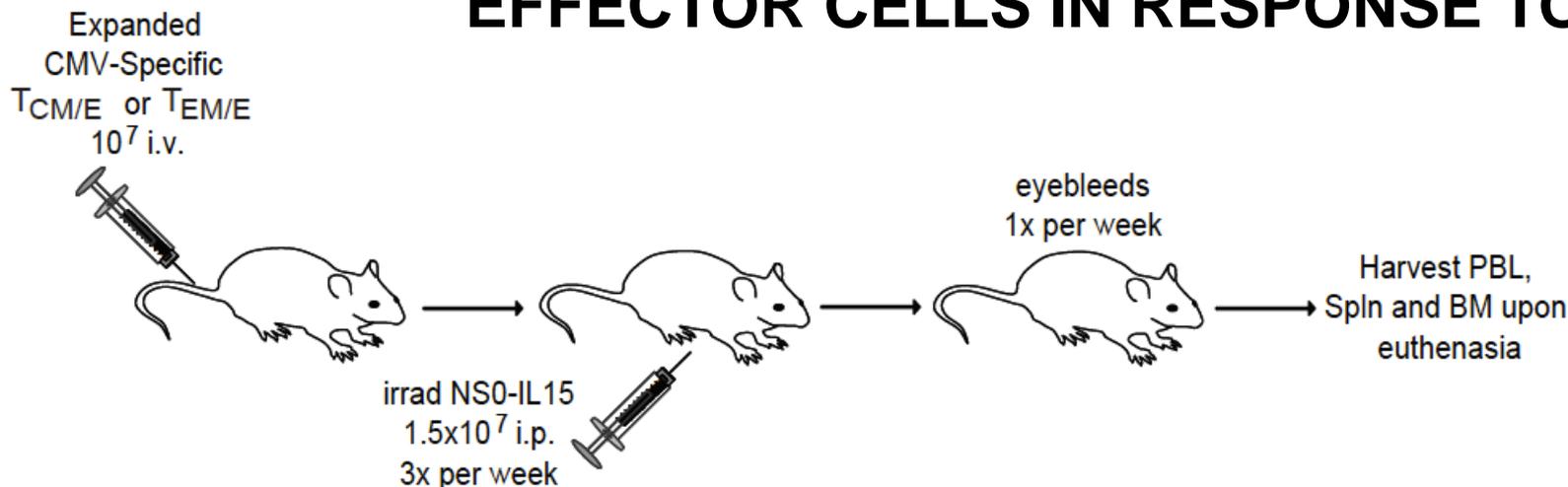
# Gene Modified T Cell Based Cancer Therapeutics



# The Derivation of T Cells For Adoptive Therapy Affects In Vivo Fate



# SELECTIVE ENGRAFTMENT OF HUMAN T<sub>CM</sub>-DERIVED EFFECTOR CELLS IN RESPONSE TO IL-15



# Tcm CAR T Cell Immunotherapy:



LEUKAPHERESIS/PBM  
C ISOLATION

PURIFICATION OF  
CD45RO<sup>+</sup>CD62L<sup>+</sup> Tcm



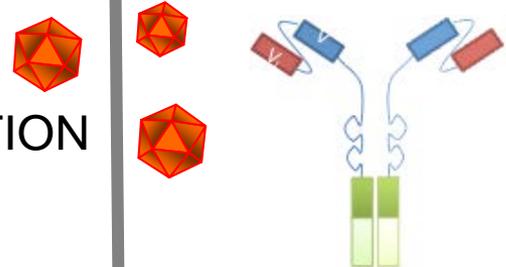
ACTIVATION OF T CELLS  
(ANTI-CD3/CD28 BEADS)

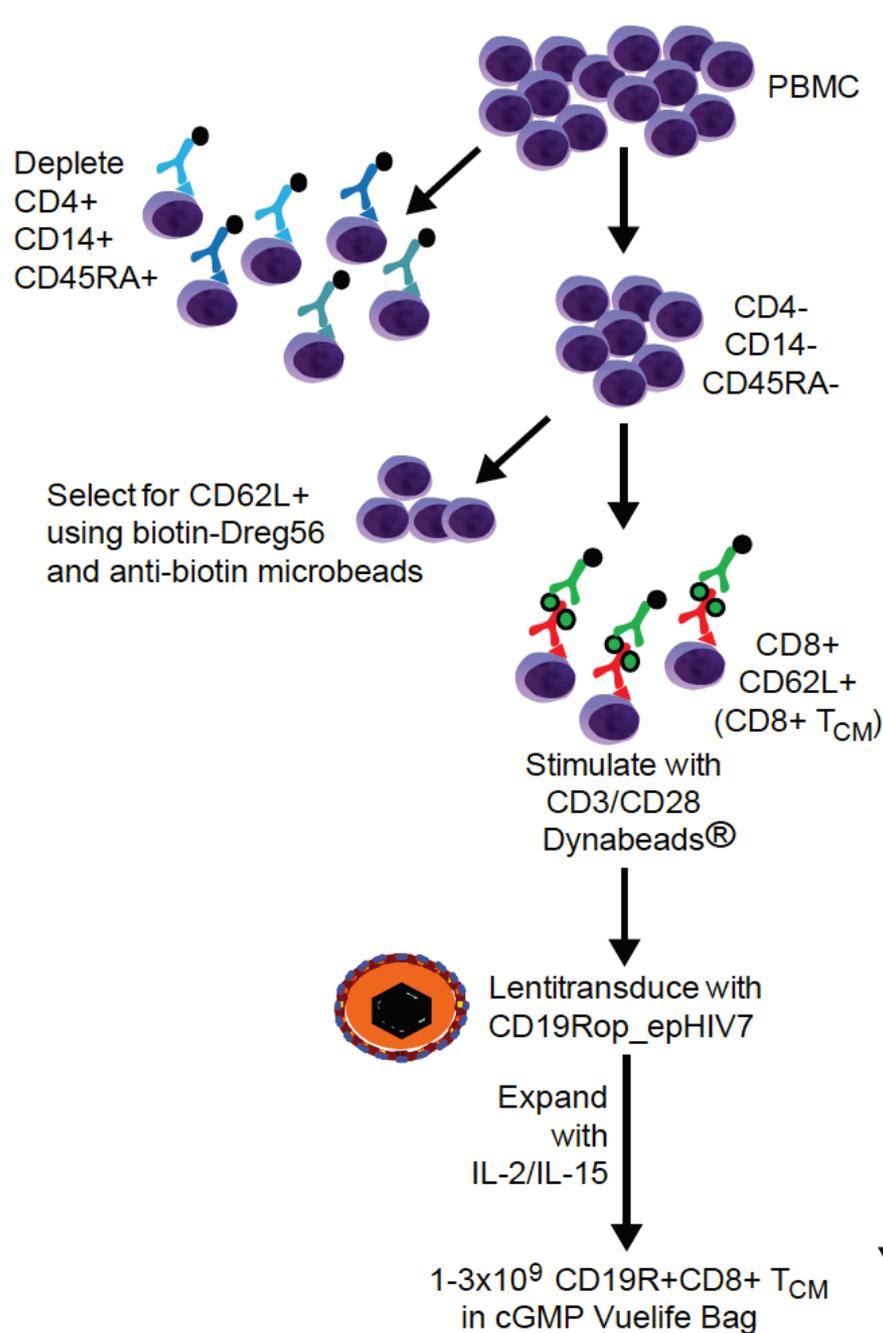


TRANSDUCTION

EXPANSION IN  
CYTOKINES

PREPARE FOR RE-INFUSION

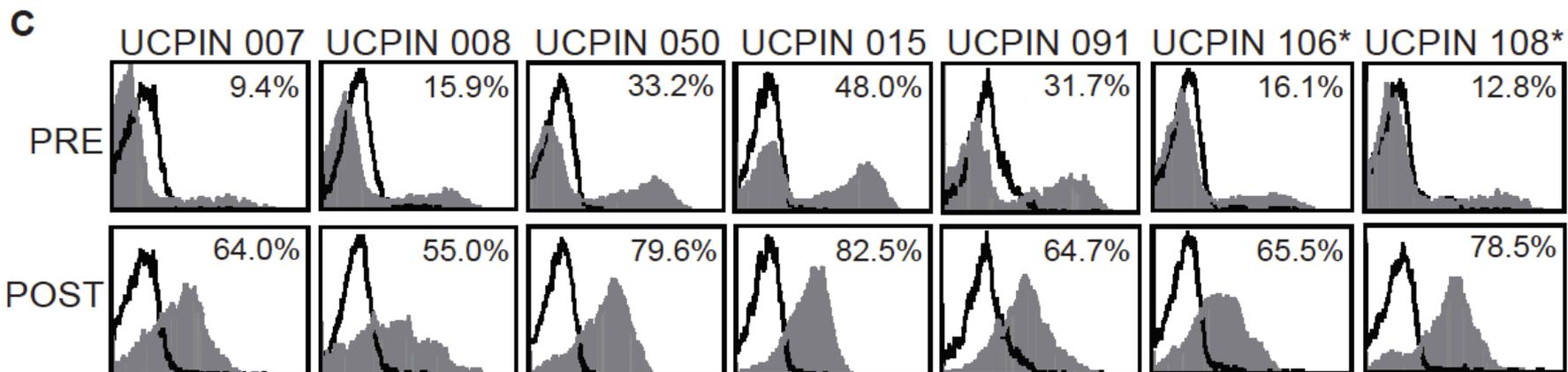
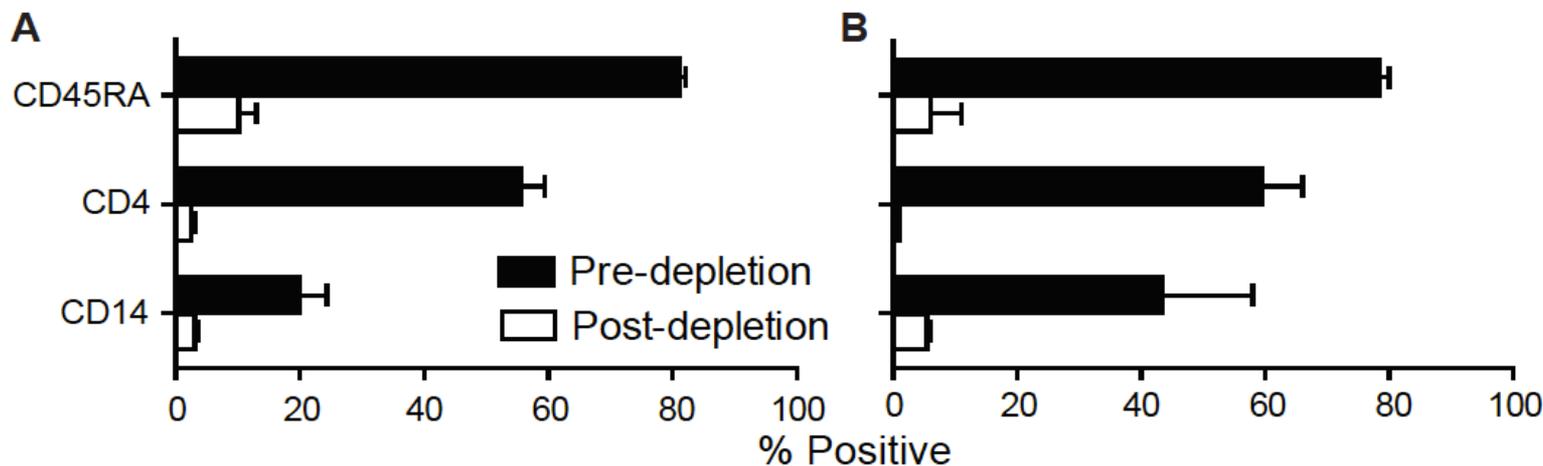




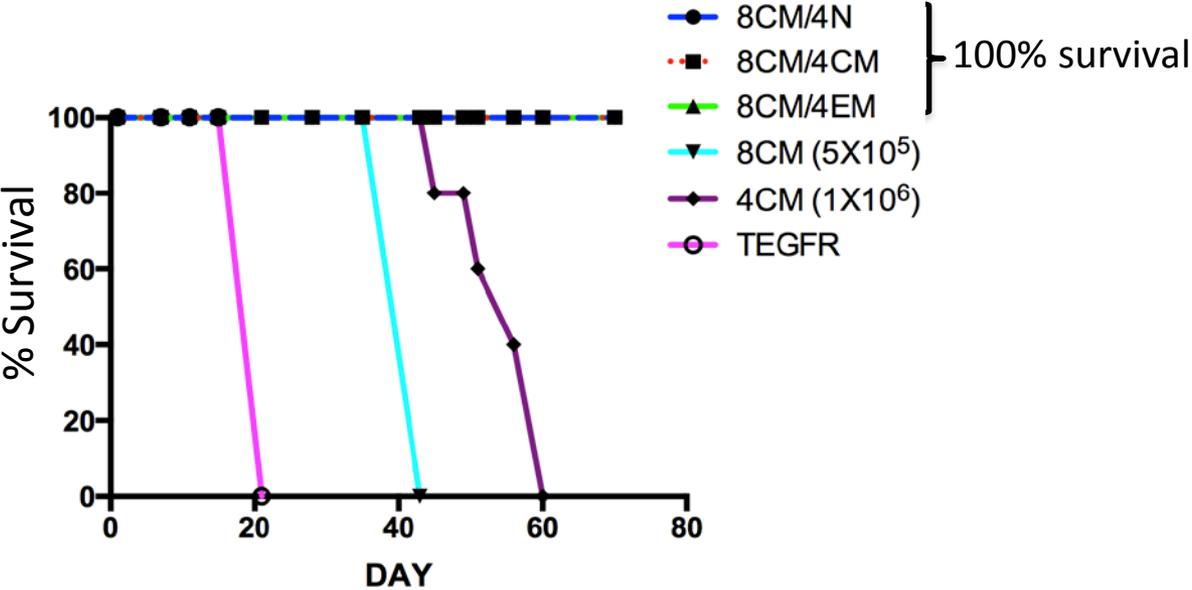
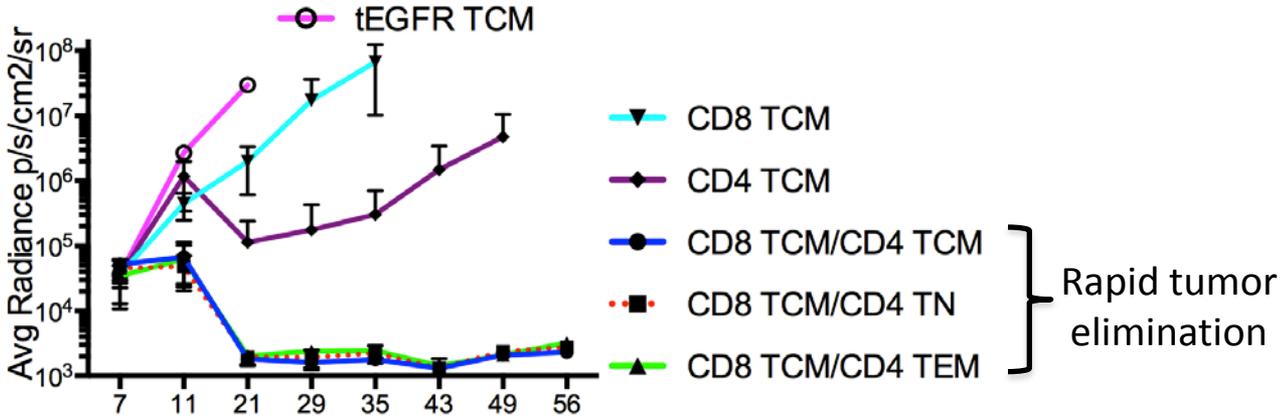
## Day - Bioprocess:

- 1 - Leukapheresis
- 2 - CliniMACS™ Selection;  
CD3/CD28 Stimulation
- 5 - Lentiviral Transduction;  
Initiate Expansion
- 14-30 - Dynabead® Removal
- 28-42 - Cryopreservation

# Representative Depletion/Enrichment Results:



# The addition of CD4<sup>+</sup> T cells to CD8<sup>+</sup> T<sub>CM</sub> augments CD19 directed antitumor immunity in vivo



# Clinical Grade Production of CD19 CAR CD8<sup>+</sup> TCM and CD4<sup>+</sup> T Cells

