

Purification of CAR+ T Cells Reveals Impact of Untransduced Cells in CAR-T Drug Product

#P26

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Introduction

- Untransduced cells play an unknown role in the potency of CAR-T cell drug product.
- Purification of CAR+ cells may reduce risk of cytokine release syndrome, non-specific killing, and graft versus host disease.
- Inserted the QBEND/10 epitope into the hinge domain of a CD33 CAR-T construct to enable immunomagnetic selection with CD34 microbeads.
- Achieved 95% CAR+ purity with greater than 75% recovery of CAR+ input cells.
- Observed no substantial increase in potency or cytokine release when adding untransduced cells to effector cells.
- Full activation is not observed in UTD cells co-cultured with CAR+ and WT target cells

Fig. 1: CAR-T Cell Purification Method

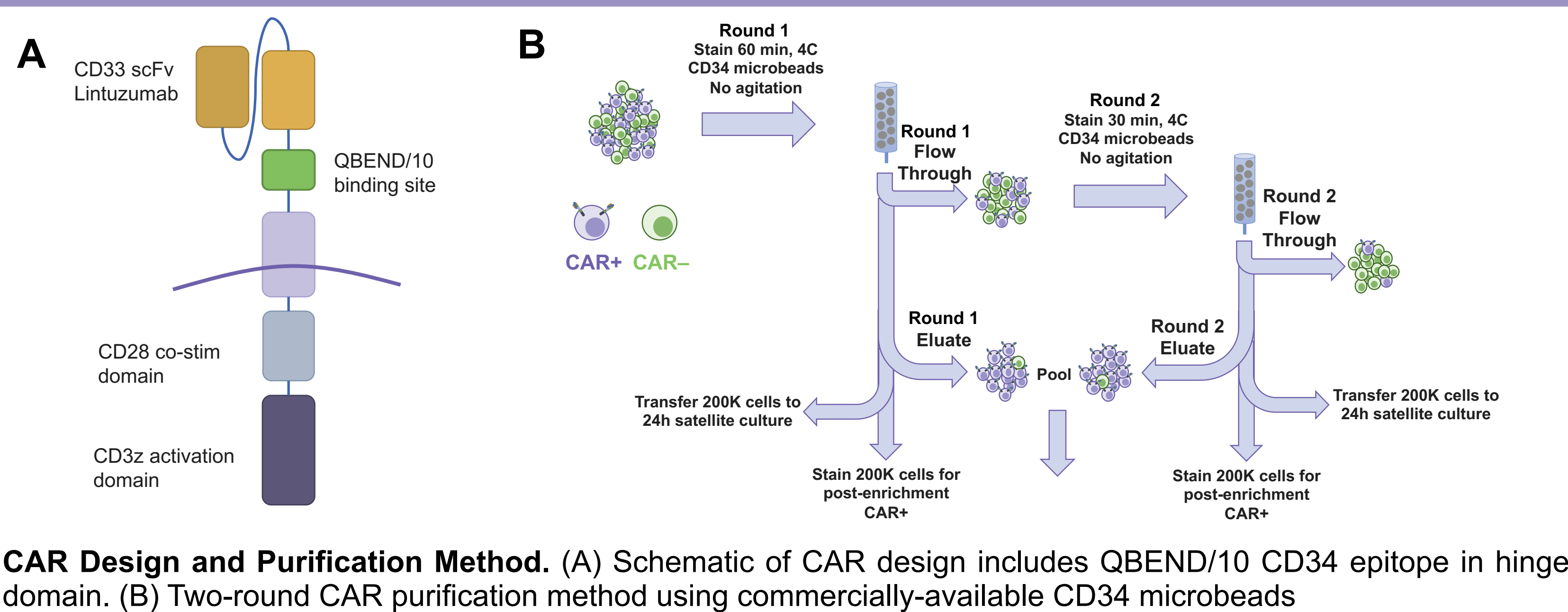


Fig. 2: Purification of CAR+ Cells

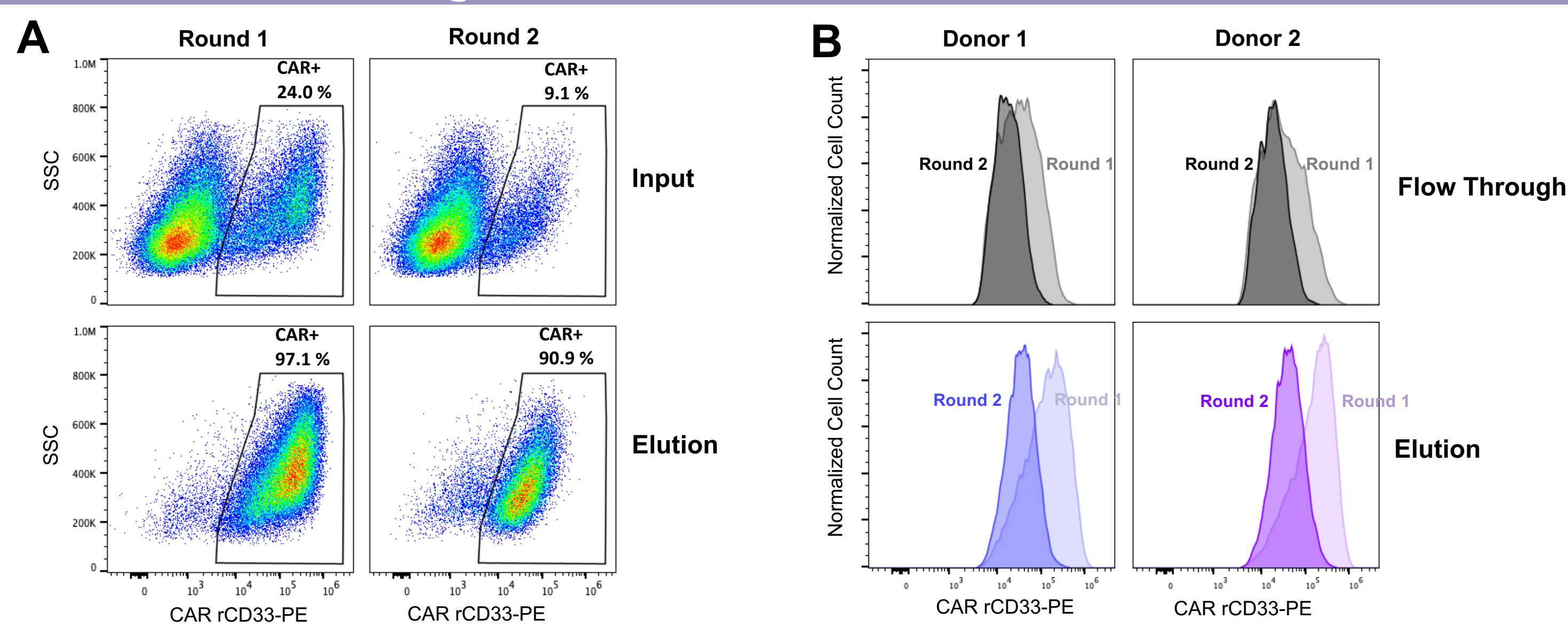


Fig. 3: Post-Enrichment Activation of CAR+ Cells

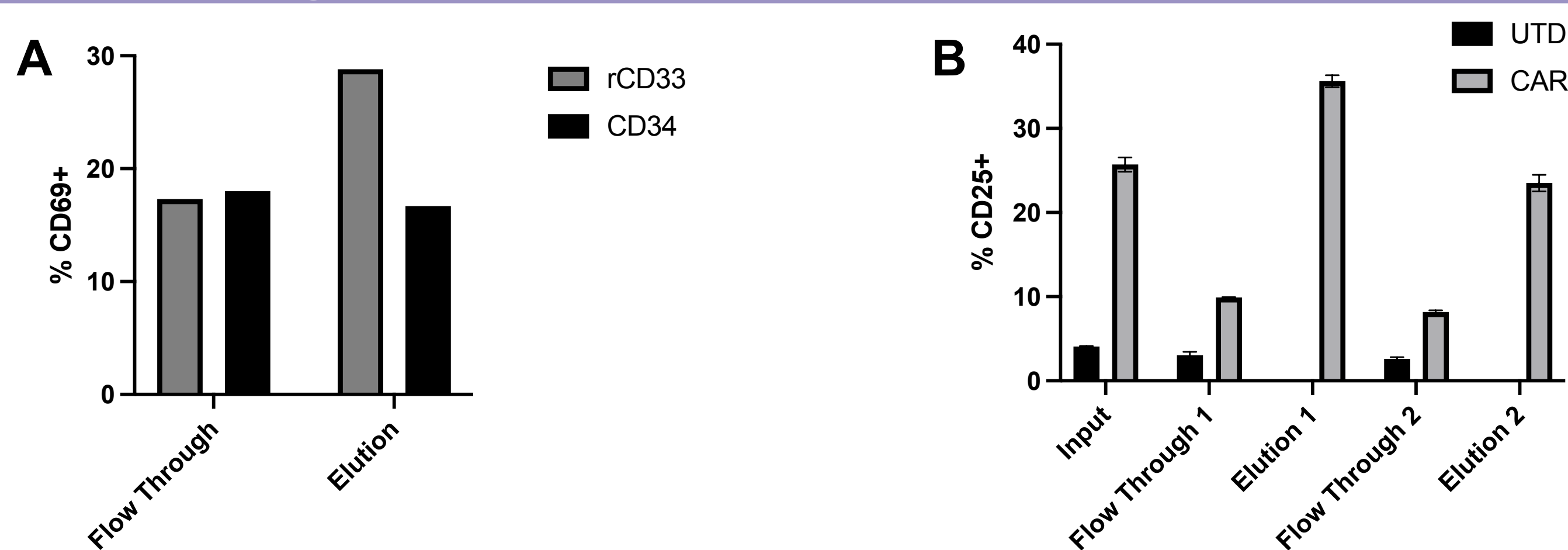


Fig. 4: Recovery of CAR+ Cells

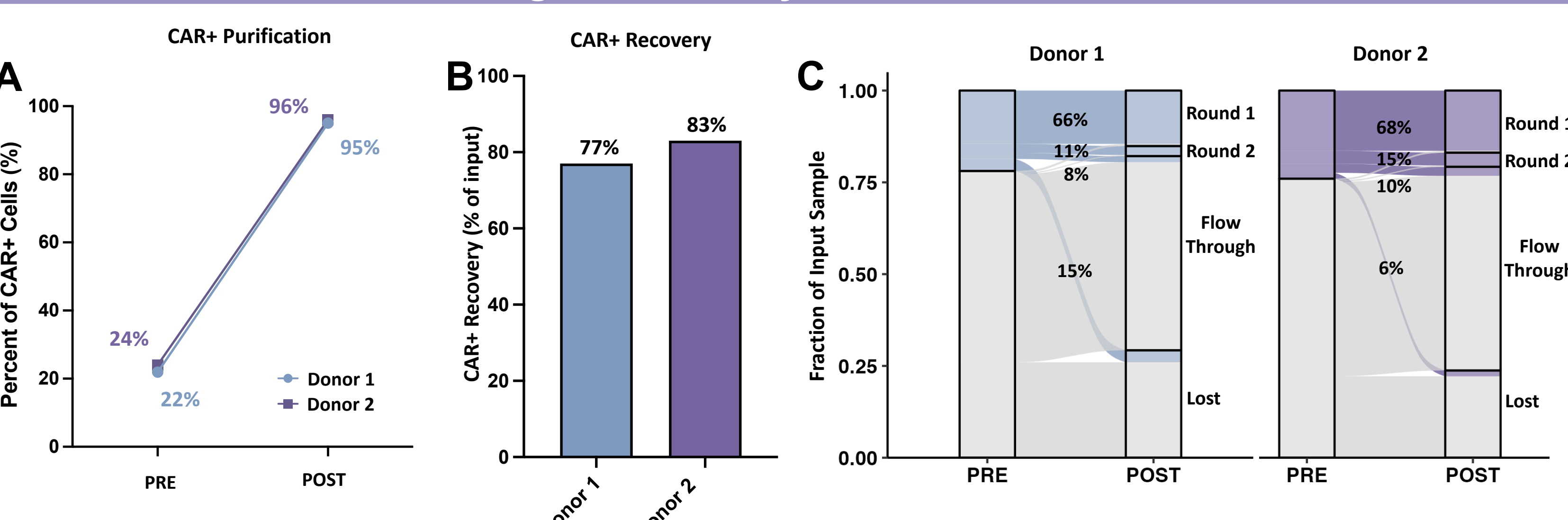


Fig. 5: CAR-T Cell Dilution Cytotoxicity Assay

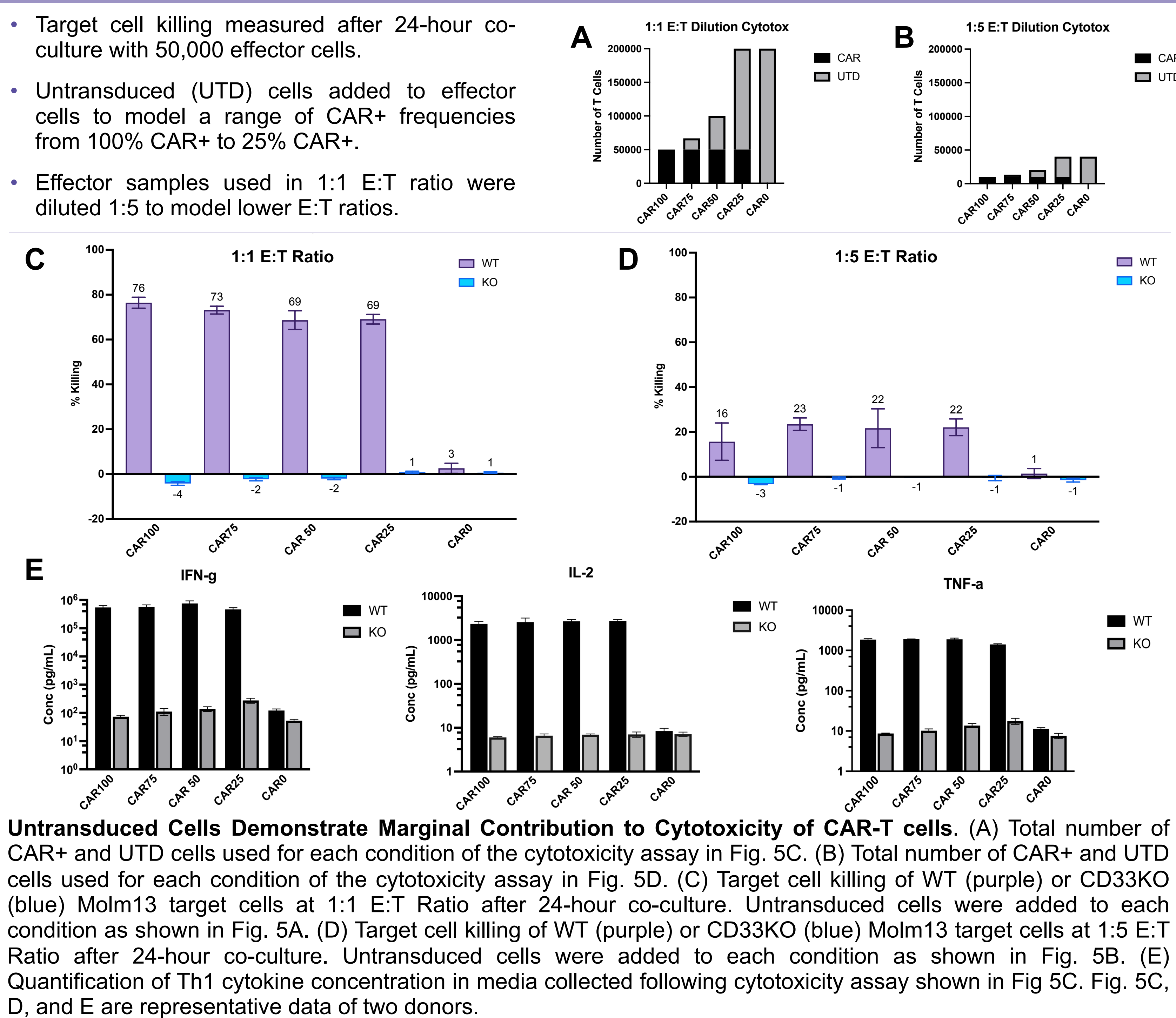
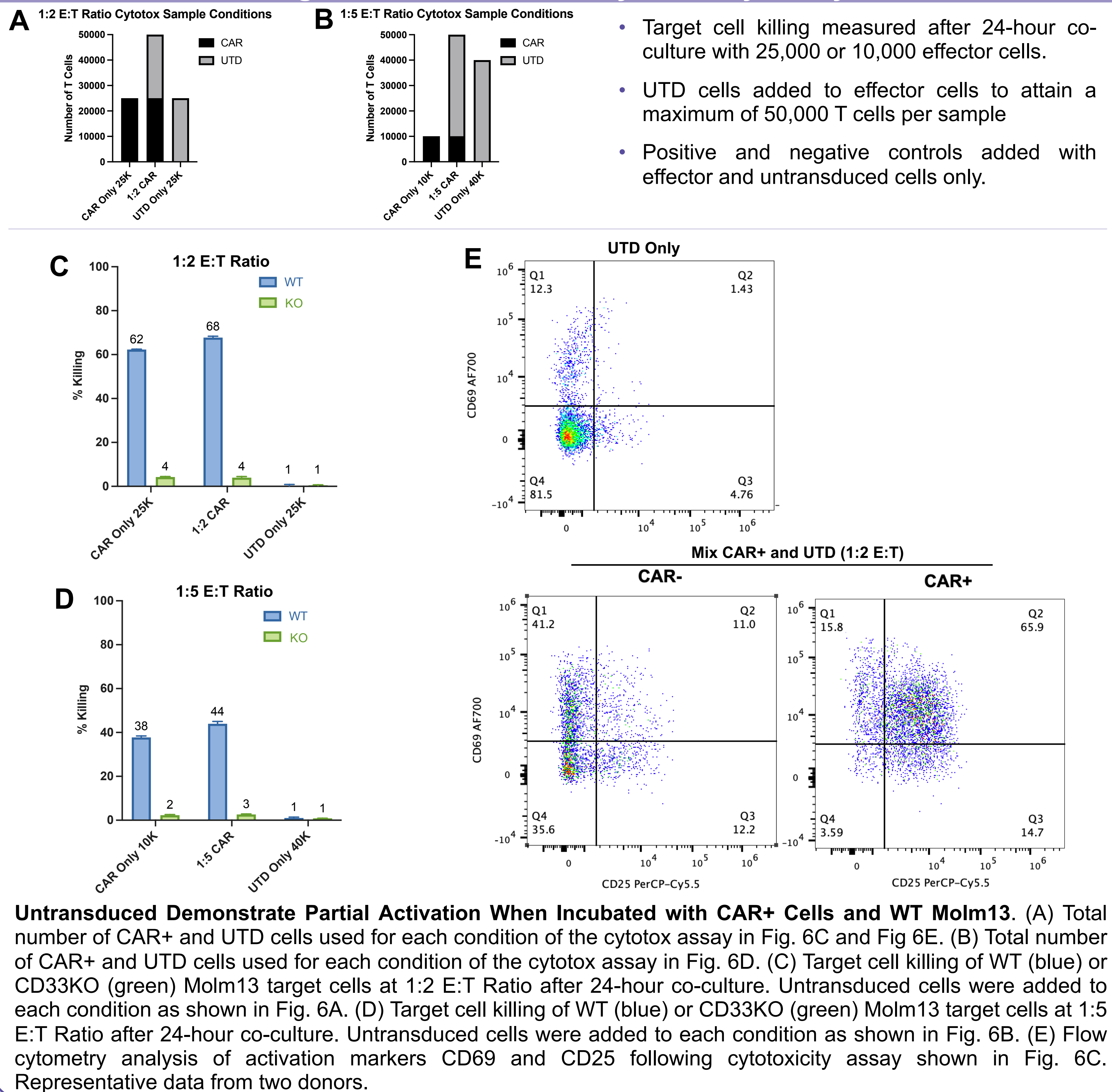


Fig. 6: CAR-T Cell Ratio Cytotoxicity Assay



Conclusions

- CAR+ purification yields a product of greater than 95% CAR+ cells, with a recovery greater than 75% of CAR+ input.
- Purification by CD34 microbeads does not induce CAR-T activation.
- Untransduced cells do not substantially increase to CAR-T cell potency or cytokine release.
- Partial activation of untransduced cells is observed when co-cultured with CAR+ and WT targets.