

SUPPLEMENTARY MATERIAL FOR:

Dual-degenerate TCRs target multiple KRAS hotspot and HLA-A3 family combinations

Authors

Minying Zhang^{1,*}, Barbara Nassif Rausseo^{1,2,*}, Peixin Jiang¹, Emily Bontekoe¹, Amanda Montoya Alves¹, Jared K. Slone³, Waree Rinsurongkawong⁴, Vadeerat Rinsurongkawong⁴, Anika Patel³, Jeff Lewis⁴, Michael Davies², Patrick Hwu⁵, J. Jack Lee⁶, Ignacio I. Wistuba^{1,7}, Ara Vaporciyan⁸, Drew C. Deniger¹, Greg Lizée², Cassian Yee², Lydia Kavraki^{3,10}, Don L. Gibbons¹, Hai Tran¹, Jianjun Zhang^{1,9}, John V. Heymach¹, Alexandre Reuben¹

¹Department of Thoracic/Head & Neck Medical Oncology, ²Department of Melanoma Medical Oncology, ⁴Department of Quantitative Research Computing, ⁶Department of Biostatistics, ⁷Department of Translational Molecular Pathology, ⁸Department of Thoracic and Cardiovascular Surgery, ⁹Department of Genomic Medicine, The University of Texas MD Anderson Cancer Center

³Department of Computer Science, ¹⁰The Ken Kennedy Institute, Rice University

⁵Department of Clinical Science, H Lee Moffitt Cancer Center and Research Institute

*Co-first authors

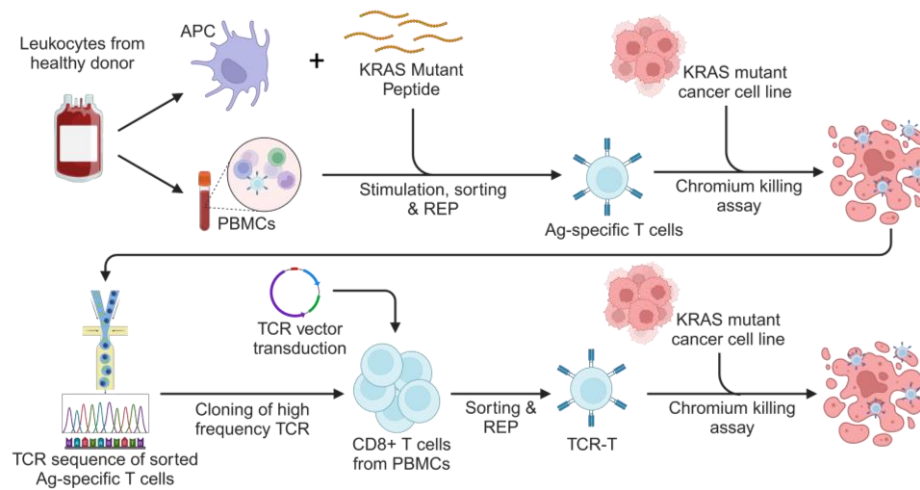
Correspondence to: Alexandre Reuben - areuben@mdanderson.org

Alexandre Reuben is the lead contact.

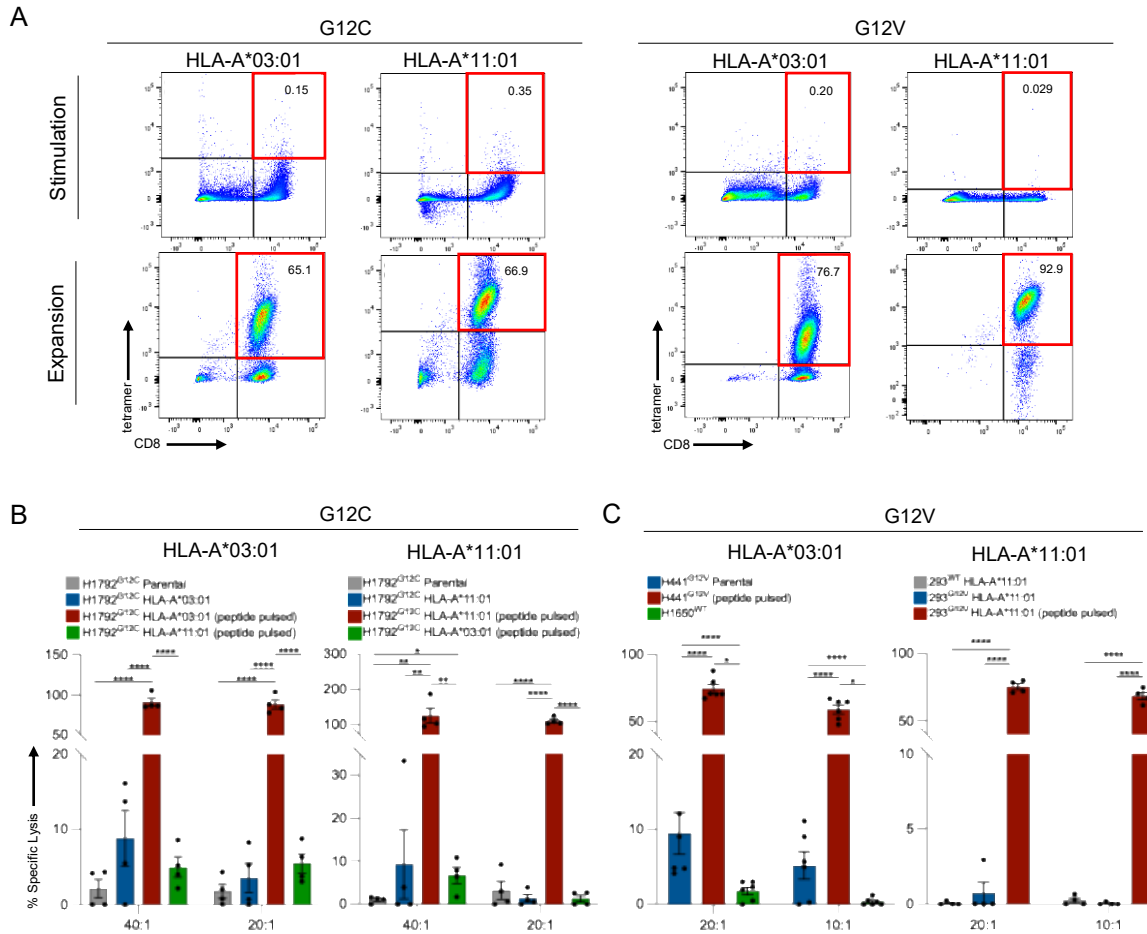
Supplementary Figure 1

Supplementary Figure 2

Supplementary Fig. 1, Zhang, Nassif Rausseo et al.



Supplementary Figure 1. Workflow for the discovery and validation of TCR-T cells recognizing KRAS mutant epitopes.



Supplementary Figure 2. KRAS G12C and G12V are immunogenic when presented on HLA-A*03:01 and HLA-A*11:01. A) Tetramer staining of CD8⁺ antigen-specific T cells after stimulation (top row) and after expansion using REP (bottom row). B) ⁵¹Cr re-lease assay of co-cultured G12C-specific T cells from REP with H1792G12C parental or H1792G12C transduced with HLA-A*03:01 (A3) or HLA-A*11:01 (A11) with and without G12C peptide pulsing. C) ⁵¹Cr release assay of expanded G12V-specific T cells co-cultured with HLA-A*03:01 or HLA-A*11:01-expressing cell lines. G12V-specific T cells Co-cultures with A3-positive targets used H441G12V parental and H441G12V peptide-pulsed, or with irrelevant target control H1650WT cells. G12V-specific T cells co-cultures with A11-positive targets used 293 transduced to express KRAS G12C peptide and HLA-A*11:01 with or without peptide pulsing, or 293 A11⁺ as antigen-negative control. y-axis represents the % specific lysis. Analyzed with Unpaired t test, bars represent mean value $\pm$ SEM, each dot represents a technical replicate. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.