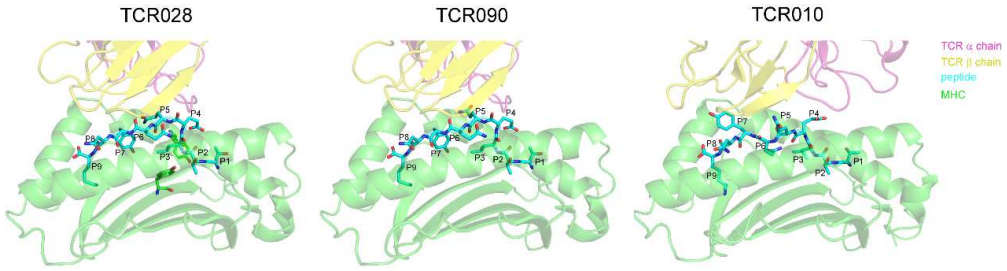
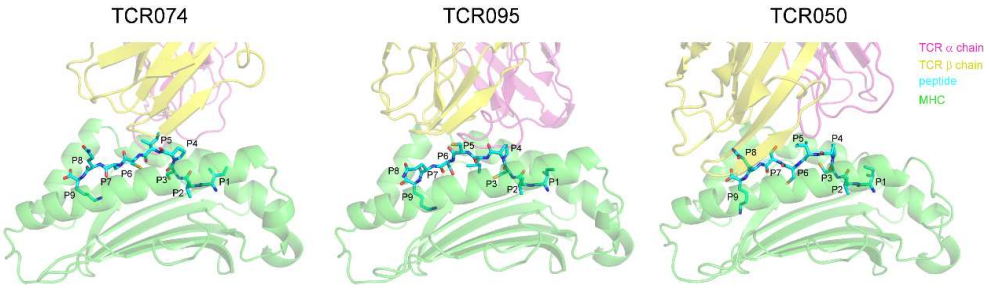
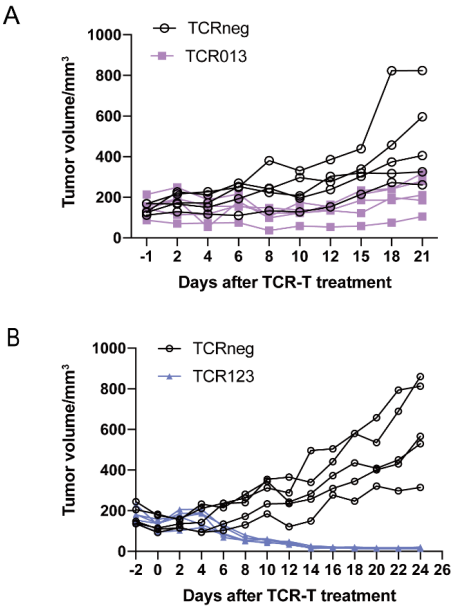
Supplementary Figure 1. The predicted 3D model of the TCR-pMHC complex for TTL-specific TCR028, TCR090, and TCR010.



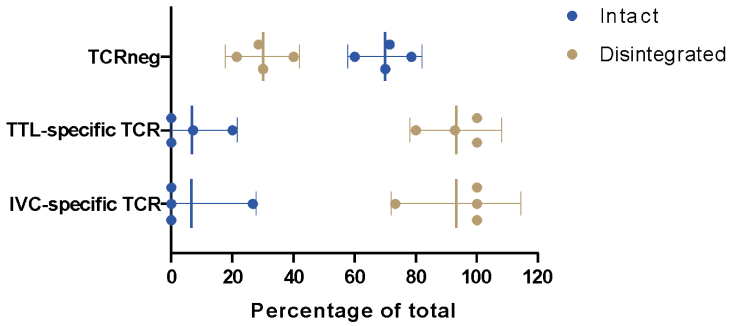
Supplementary Figure 2. The predicted 3D model of the TCR-pMHC complex for IVC-specific TCR074, TCR095, and TCR050.



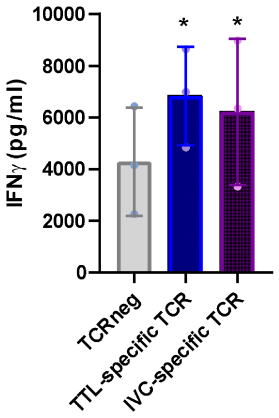
Supplementary Figure 3. The tumor growth curve for individual mouse of Figure 5F (A) and Figure 6F (B).



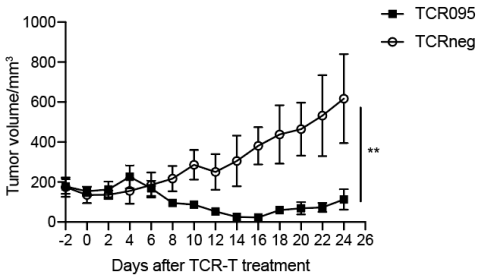
Supplementary Figure 4. The scatter plot with error bars of Figure 7D.



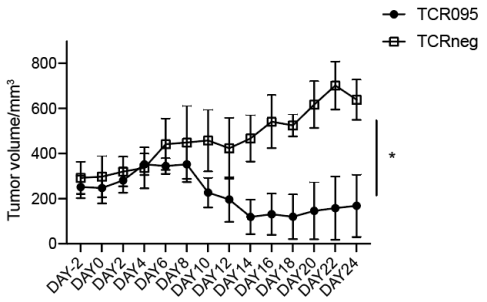
Supplementary Figure 5. The TCR013-engineered T cells (TTL-specific), TCR123-engineered T cells (IVC-specific), or non-transduced (TCRneg) T cells were cocultured with A11-transduced KOCC-002S4 organoids for 72 h, and the released IFNγ in the supernatant was determined by ELISA.



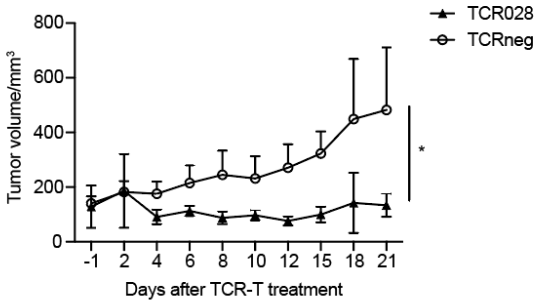
Supplementary Figure 6. Antitumor activity of IVC-specific TCR095-T cells in vivo. SK-E7 tumor cells were subcutaneously injected into NCG mice and then treated with a single retro-orbital injection of 1×10^7 TCR095-engineered T cells (TCR095) or non-transduced T cells (TCRneg) as a control.



Supplementary Figure 7. TCR095-engineered T cells (n=3) at the dose of 5×10^5 tetramer$^+$ cells (8×10^6 total cells) per mouse significantly inhibited growth of subcutaneously inoculated SK-E7 tumors. The same dose of total number of cells was administered to the non-transduced control (TCRneg) (n=3) group.



Supplementary Figure 8. Antitumor activity of TTL-specific TCR028-T cells in vivo. SK-E6 tumor cells were subcutaneously injected into NCG mice and then treated with a single retro-orbital injection of 1×10^7 TCR028-engineered T cells (TCR028) or non-transduced T cells (TCRneg) as a control.


TCR028
TCRneg
Tumor volume/mm3
800
600
400
200
0
-1
2
4
6
8
10
12
15
18
21
Days after TCR-T treatment
*