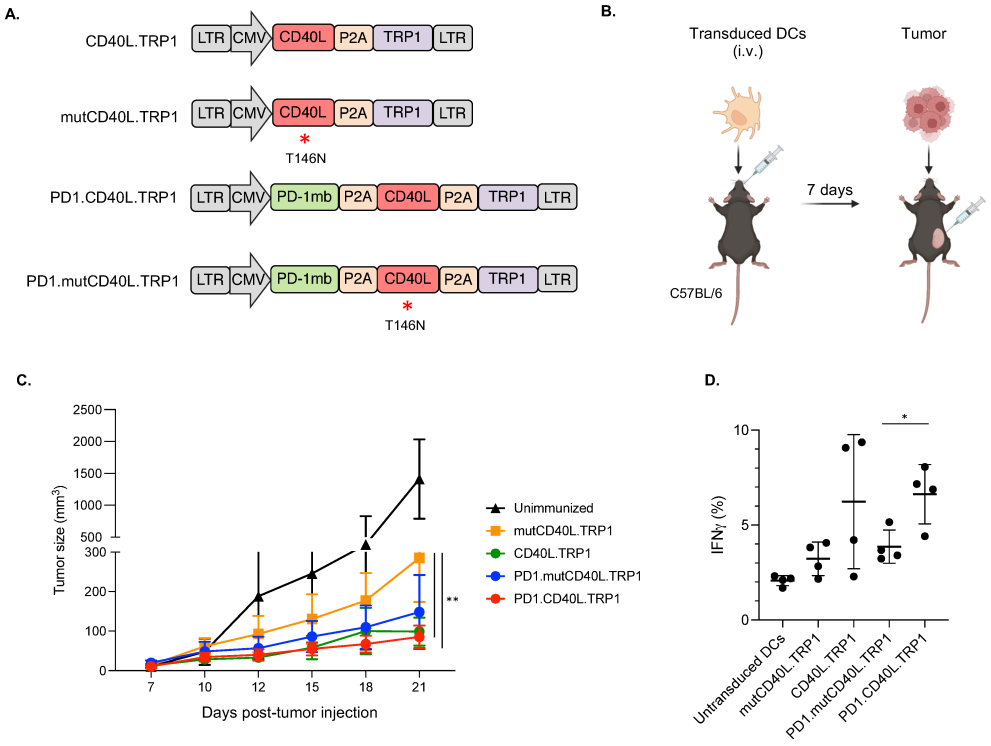


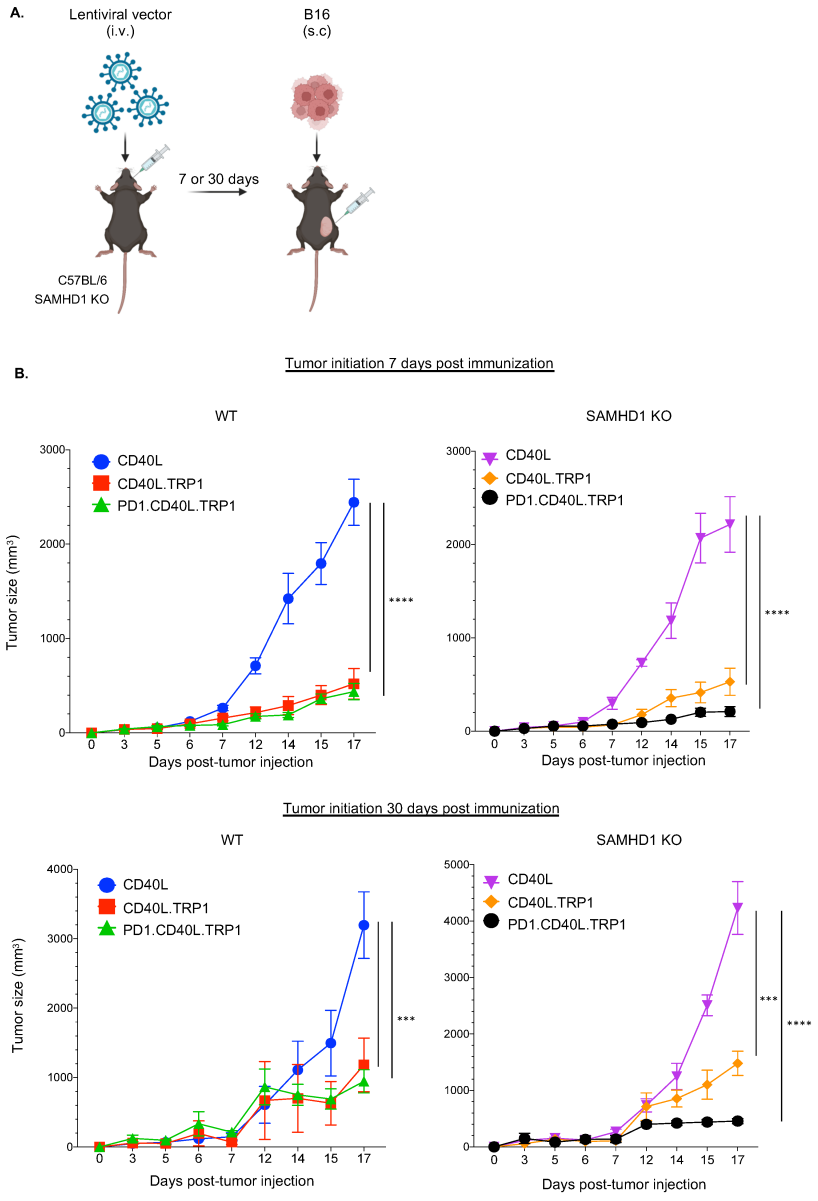
Supplementary Figure 1. **mutCD40L expressing vector loses anti-tumor activity.**

(A) The structure of lentiviral vaccine vectors is diagrammed. The vectors express CD40L, mutated CD40L (T146N) and TRP1 and the PD-1 microbody (PD-1mb).

(B) Mice were immunized with DCs transduced by lentiviral vectors that encode a CD40L T146N mutation (mutCD40LCD40L.TRP1 and PD1.mutCD40L.TRP1). One-week post-immunization, the mice were inoculated with 2.5 × 10^5 B16 melanoma cells (n=4).

(C) Tumor sizes were measured over 21 days.

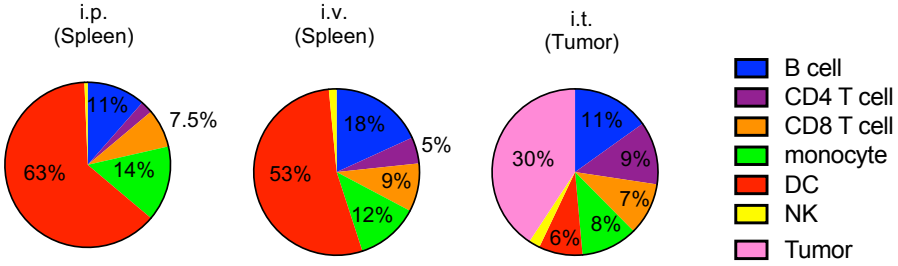
(D) The fraction of IFNγ+ CD8 T cell in the spleen were determined by flow cytometry (*P ≤ 0.05, ** P ≤ 0.01).



Supplementary Figure 2. **Comparison of vaccine efficacy in wild-type and SAMHD1 KO mice.**

(A) As diagrammed, C57BL/6 and SAMHD1 KO mice were immunized by i.v. injection of CD40L, CD40L.TRP1, and PD1.CD40L.TRP1 vectors (3×10^6 I.U.). After 7 or 30 days, the mice were inoculated with 2.5×10^5 B16 melanoma cells (n=5).

(B) Tumor sizes of mice inoculated with tumors 7 and 30-days post-vaccination were measured over 17 days.



Supplementary Figure 3. **Transduction of APCs by direct lentiviral vector injection.**

Mice were injected with 3 × 10^7 I.U. GFP expressing lentiviral vector. After 5 days, splenocytes and TILs were stained with antibodies to CD3, CD4, CD8, CD19, CD49b, CD11c, CD115 and MHC II. GFP+ CD4 T cells (CD3+/CD4+), CD8 T cells (CD3+/CD8+), B cells (CD3-/CD19+), NK cells (CD3-/CD49b+), monocyte (CD115-/CD11b+), DCs (CD11c+/MHCII+), tumor (CD45-) and analyzed by flow cytometry. The results are shown as pie charts.