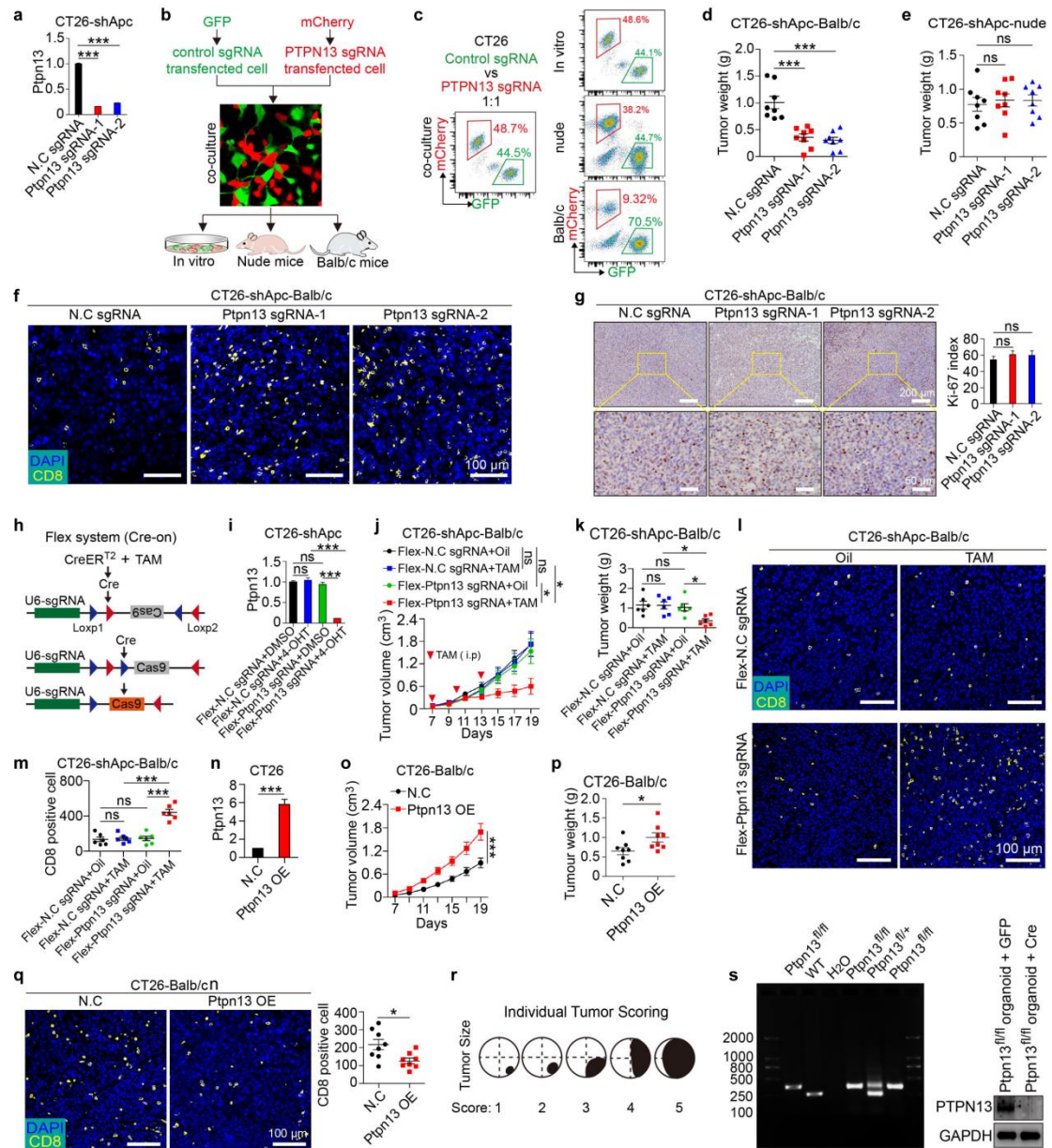




Supplementary information, Fig. S3. Additional data on the role of PTPN13 in APC-loss induced immune evasion. **a**, Knockout efficiency in indicated cells was detected using qRT-PCR. Data are calculated of three independent experiments, one-way ANOVA. **b, c**, Ptpn13 knockout- mCherry and control-GFP CT26 cells were mixed *in vitro* and subcutaneously injected proportionally (1:1) into WT Balb/c or nude mice, and GFP/mCherry ratio *in vitro* and *in vivo* was validated through FACS. **d, e**, Scatter plots show tumor weight of indicated cells formed in Balb/c (**d**) and nude mice (**e**). $n = 8$. one-way ANOVA. **f**, Immunofluorescent staining against CD8 in subcutaneous tumor in Balb/c mice. **g**, Representative images and quantification of immunohistochemistry staining against Ki-67 in indicated tumor tissues. $n = 8$ for each group, one-way ANOVA. **h**, Schematic illustration of *in vivo* Ptpn13 knockout system. **i**, Indicated CT26 cells were treated with 4-OHT or DMSO, and Ptpn13 expression was detected by qRT-PCR. **j**, Indicated CT26 cells were transplanted into Balb/c mice, tamoxifen or oil was

injected intraperitoneally, tumor growth was monitored at the indicated times. $n = 6$ for each group. Significance for tumor growth kinetics were calculated by two-way ANOVA test. **k**, Scatter plots show tumor weight of indicated cells formed in Balb/c mice. $n = 6$, one-way ANOVA. **l**, Immunofluorescent staining against CD8 in tumor tissues. **m**, Scatter plots show number of CD8 positive cell in the tumor tissue in **(l)**. one-way ANOVA. **n**, Ptpn13 was overexpressed by CRISPR/Cas9- based Synergistic Activation Mediator (SAM) system and its expression was detected by qRT-PCR. Data are calculated of three independent experiments. unpaired t test. **o**, Ptpn13 was overexpressed in CT26 cells by SAM system and indicated cells were injected subcutaneously into Balb/c mice and tumor growth was monitored. $n = 8$ for each group, two-way ANOVA. **p**, Scatter plots show tumor weight of indicated cells formed in Balb/c mice. $n = 8$, unpaired t test. **q**, Immunofluorescent staining against CD8 in Ptpn13-overexpressed tumor tissues. Scatter plots show number of CD8 positive cell in the tumor tissues. unpaired t test. **r**, Schematic illustration of the tumor scoring determined by the diameter of the colonic lumen occupied by the tumor. **s**, Offspring of Ptpn13 conditional knockout mice were screened by using PCR and knockout efficiency was detected by immunoblot. All data are mean $\pm$ s.e.m., * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.