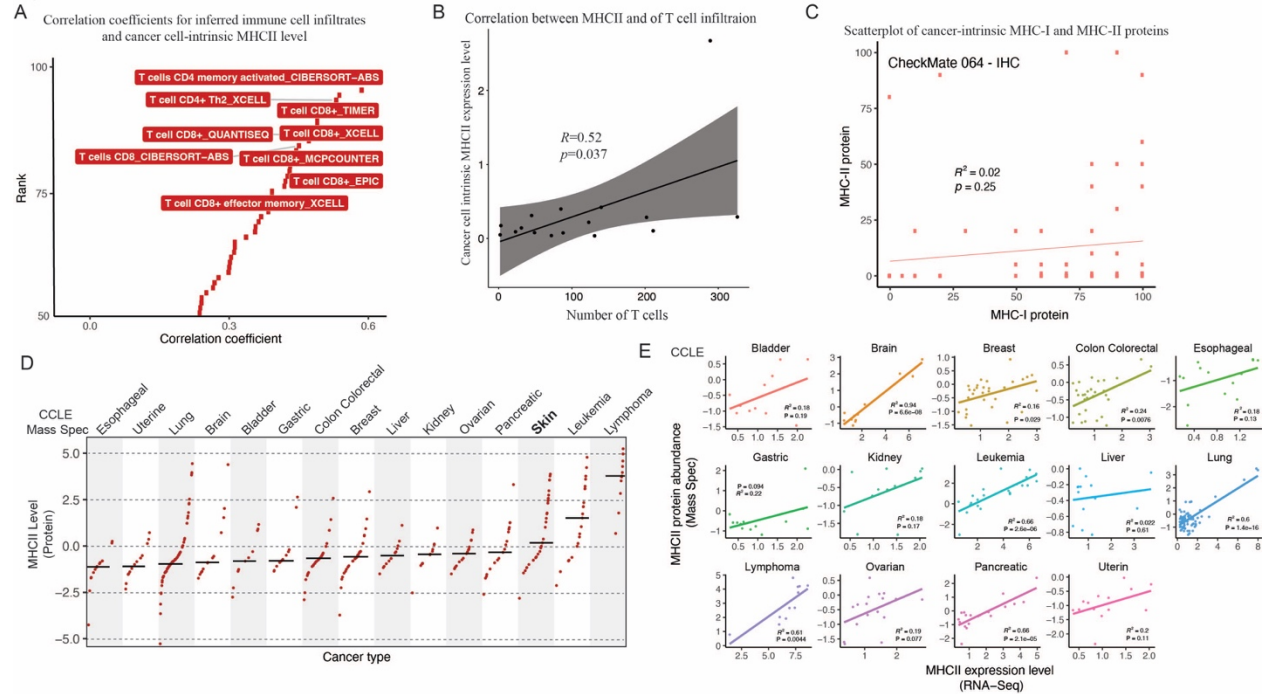**Fig. S1 Cancer cell-intrinsic MHC-II is highly expressed in skin cancer cell lines and is correlated with T cell infiltration. (A)** Rank plot of the correlation coefficients derived from correlations between inferred immune cell infiltrates and cancer cell-intrinsic MHC-II. **(B)** Correlation between cancer cell-intrinsic MHC-II and T cell infiltrates in single-cell data. **(C)** Scatterplot of cancer-intrinsic MHC-I and MHC-II protein levels in the CheckMate 064 study. **(D)** Cancer cell-intrinsic MHC-II protein abundance in a diverse panel of 367 human cancer cell lines from CCLE data. Cancer cell lines were grouped by cancer type. The protein level was quantified by mass spectrometry. **(E)** The correlation between MHC-II mRNA level and MHC-II protein abundance in a diverse panel of cancer types (CCLE data)**.**
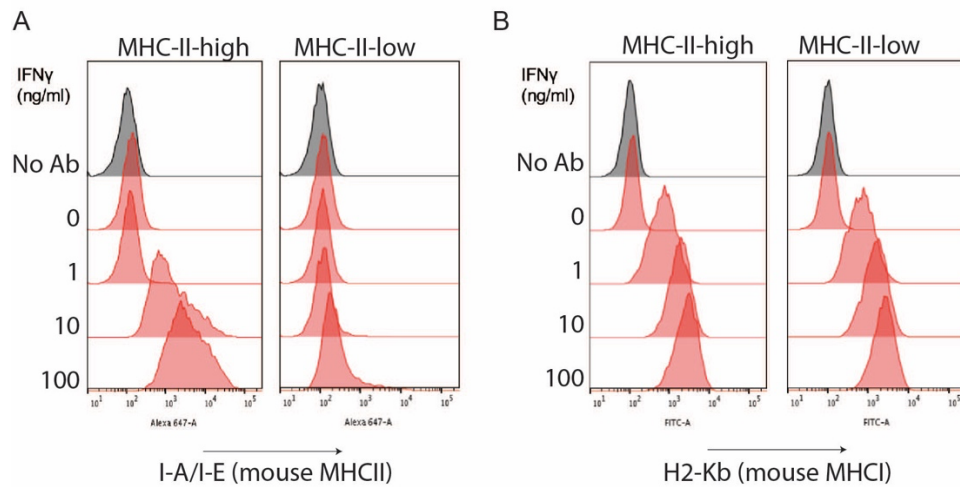
Fig. S2 MHCI and MHC-II levels in the MHC-II-high and -low cells. B16F10 cells were treated

with IFNγ for 48 hours, and the cells were FACS-sorted into MHC-II-high and -low

subpopulations based on their I-A/I-E (mouse MHC-II) expression. The MHC-II levels **(A)** and

MHCI **(B)** levels were measured.