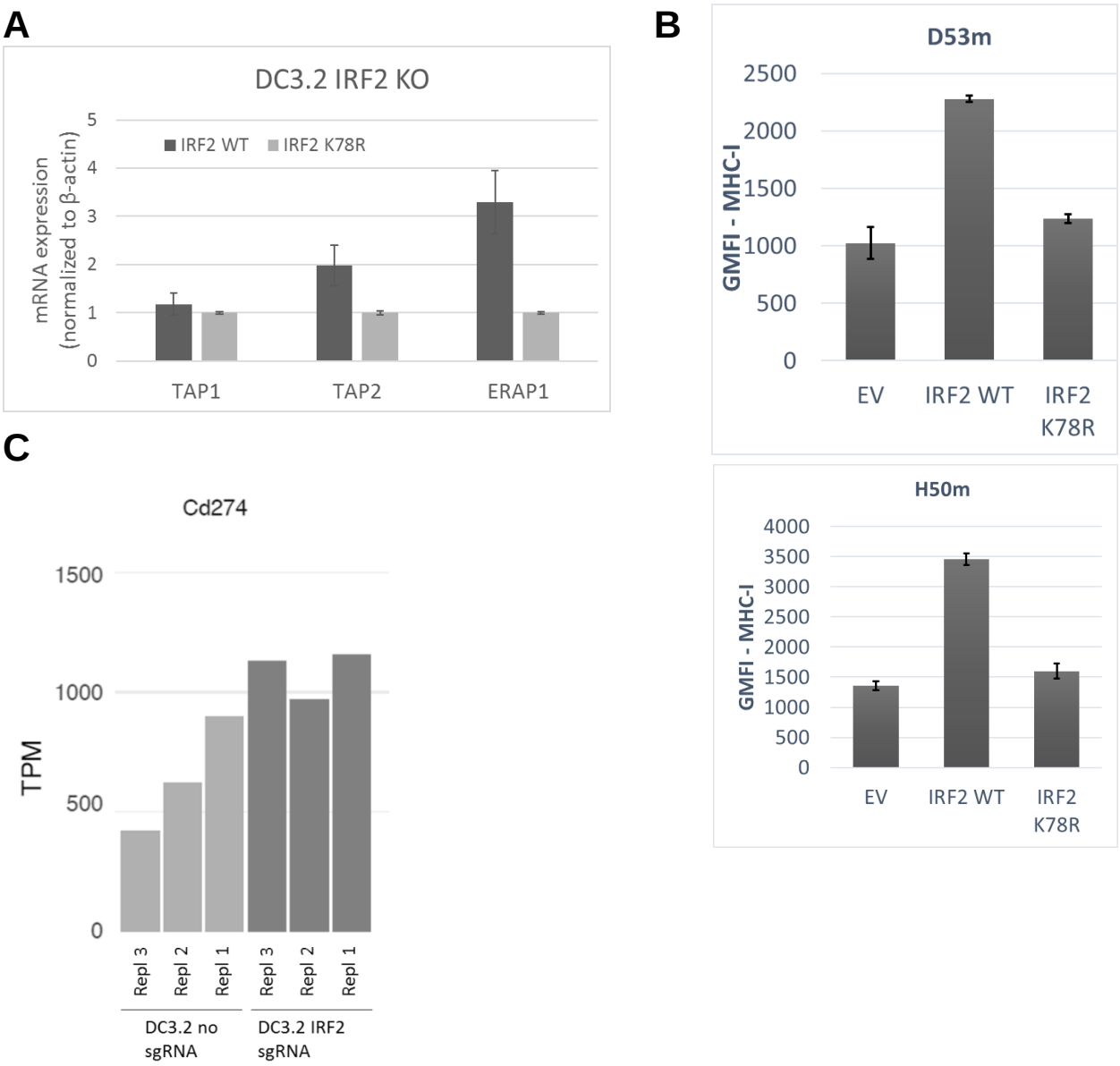

Fig. S1. Effects of IRF2 deficiency on antigen presentation machinery and PD-L1 expression

(A) TAP1, TAP2, or ERAP1 mRNA expression levels by qPCR in DC3.2 IRF2 KO 24hrs after overexpressing pCDH wild-type IRF2 (IRF2 WT) or mutant IRF2 (IRF2 K78R) relative to overexpressing pCDH IRF2 K78R; normalized to the mRNA expression of mouse β-actin in each sample ($2^{\wedge-\Delta\Delta Ct}$). Values >1 indicate higher expression than overexpressing IRF2 K78R and values<1 indicate lower expression than overexpressing IRF2 K78R. Representative experiment shown; bars represent mean ± SEM of mRNA expression of duplicate technical replicates; **(B)** Geometric MFI of surface MHC-I on D53m (top) or H50m (bottom) mouse sarcoma lines transduced with empty vector (EV), wild-type IRF2 (IRF2 WT), or mutant IRF2 (IRF2 K78R). Representative experiment shown; bars represent mean ± SD of technical duplicates. **(C)** PD-L1 mRNA expression in the DC3.2 no sgRNA ("WT") and DC3.2 IRF2 sgRNA ("IRF2 KO") lines. Bars represent TPM from 3 independent RNA-seq replicates.

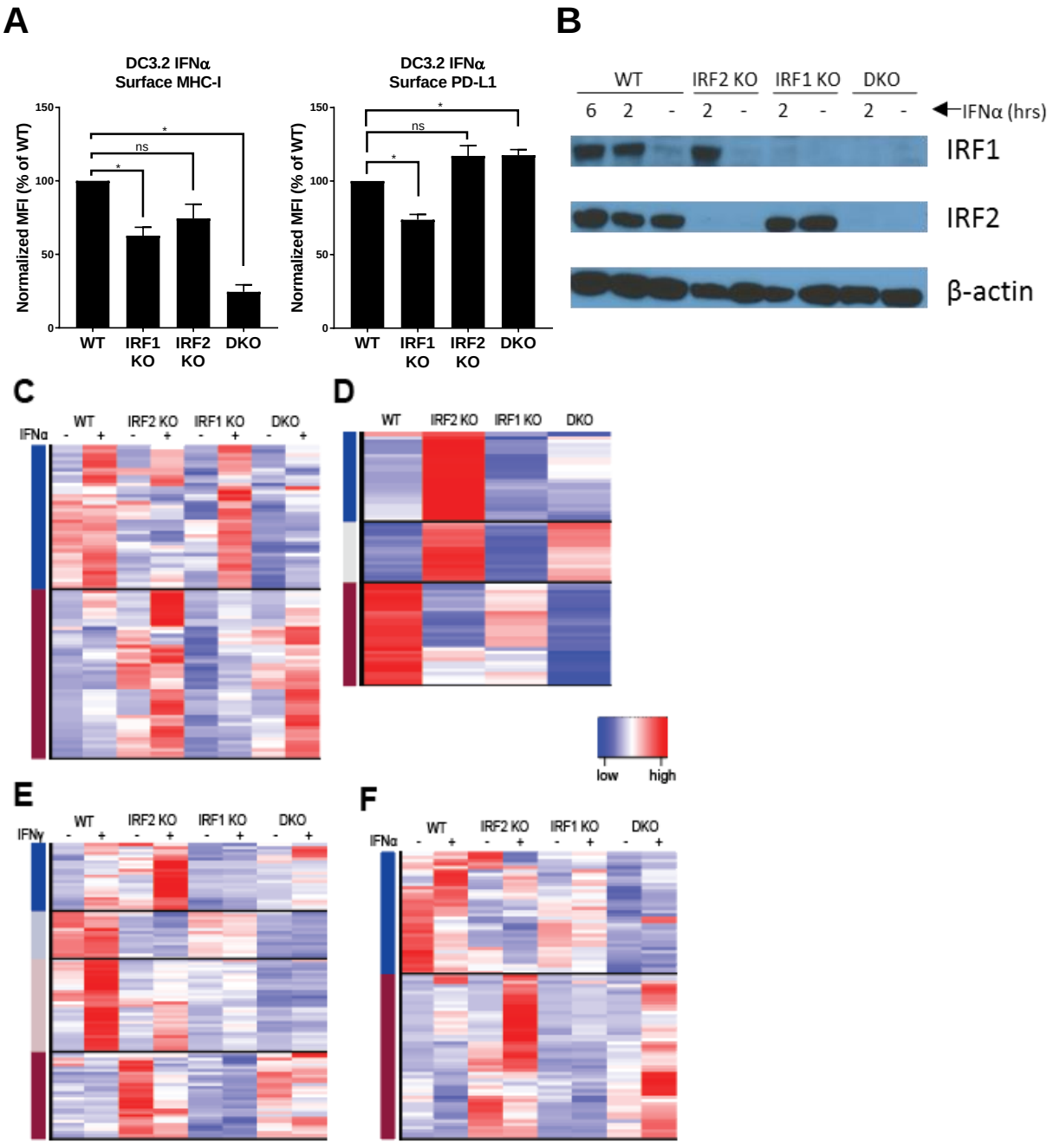

Fig. S2. Contributions of IRF1 vs. IRF2 after IFN stimulation

(A) Normalized MFI of surface MHC I and PD-L1 levels on DC3.2 stable knockout lines after overnight incubation with 5,000U/mL IFNα; bars represent mean + SEM (N=3). Statistical analysis by two-tailed ratio paired t-tests; **(B)** Western blots of IRF1 and IRF2 (and β-actin as loading control) in DC3.2 KO lines in the absence or presence of 5,000U/mL IFNα for the durations indicated; **(C)** RNA-seq of DC3.2 no sgRNA (WT), IRF2 sgRNA (IRF2 KO), IRF1 sgRNA (IRF1 KO), or IRF1 + IRF2 sgRNAs (DKO) after stimulation for 2hrs with 5,000U/mL IFNα or media alone; **(D-F)** Second RNA-seq replicate of Fig. 5d, 5e, and Fig. S2c, respectively. **(C-F)** Genes from heatmaps listed in Table S1.

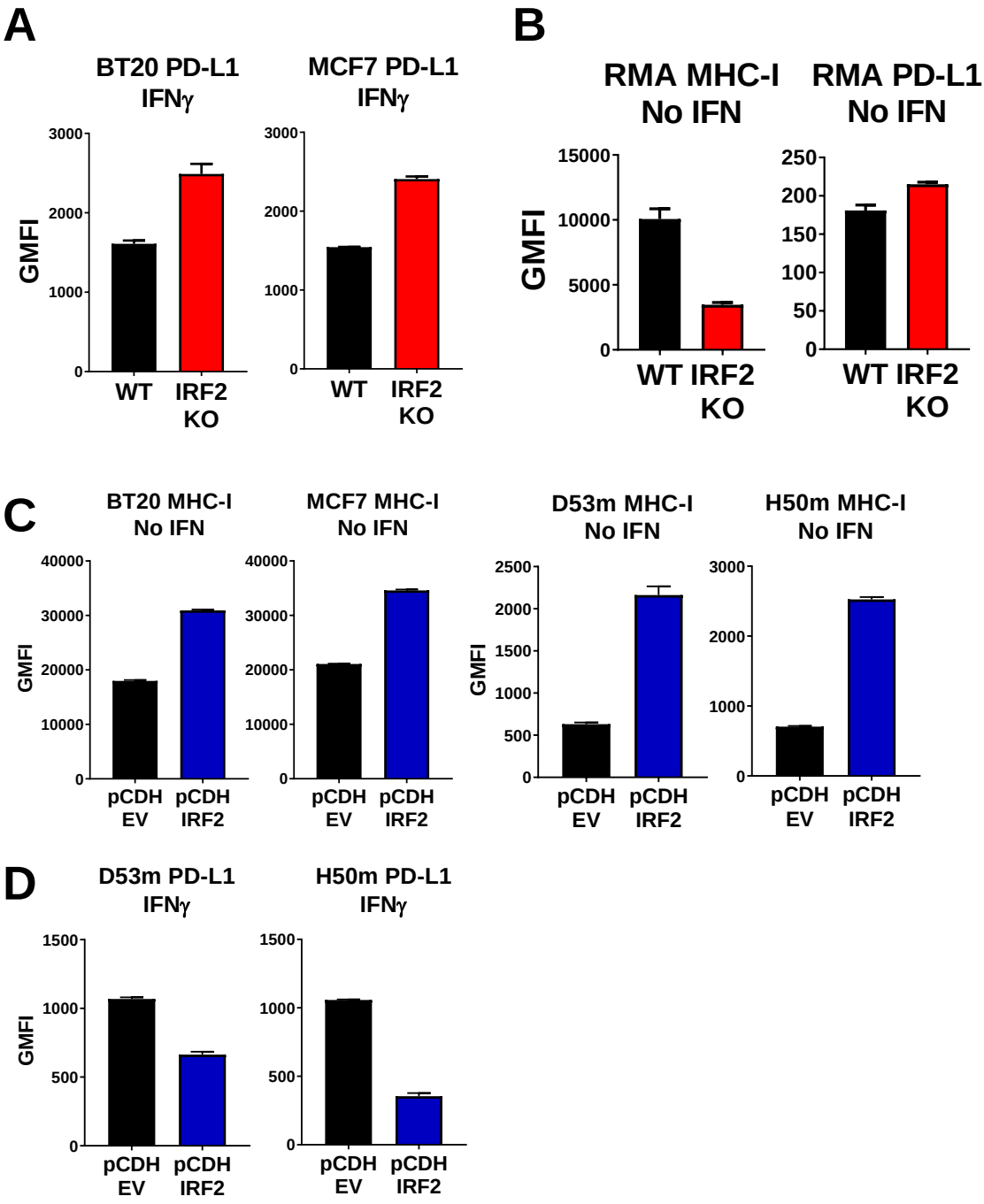

Fig. S3. Effects of IRF2 knockout or overexpression on other cell lines

(A-D) Geometric MFI of **(A)** surface PD-L1 on IFNγ-stimulated BT20 and MCF7 knockout lines; **(B)** surface MHC-I (left) or surface PD-L1 (right) on unstimulated RMA lymphoma knockout lines; **(C)** surface MHC-I on (left) unstimulated BT20 and MCF7 lines or (right) unstimulated D53m and H50m mouse sarcoma lines overexpressing IRF2 (pCDH IRF2) or empty vector control (pCDH EV); and **(D)** surface PD-L1 on IFNγ-stimulated D53m and H50m overexpression lines. Representative experiments shown, error bars represent staining of technical replicates.