

Supplemental Figure Legends.

Supplemental Figure 1. (A) Reverse transcription qPCR for *ESR1* expression in myeloid (CD45⁺CD11b⁺) and non-myeloid (CD45⁺CD11b⁻) cells isolated from dissociated ovarian tumor or bone marrow (BM) from cancer patients (NTC indicates no template control). (B) Same analysis performed with peripheral blood (PB) from 5 different ovarian cancer patients. (C) Survival of WT oophorectomized (OVX) or sham-operated mice challenged with intraperitoneal ID8-*Defb29/Vegf-a*, and supplemented or not with estradiol (n_≥5 mice/group; see also independent experiment in **Figure 1F**). (D) Proliferation relative to vehicle of Lewis Lung Carcinoma Cells (LLC) and MCF-7 (positive control) cells in response increasing doses of estradiol (in steroid-free media) and the ER antagonist fulvestrant as determined by MTS assay. (E) Same analysis performed for A7C11 cells. (F) Estrogen and fulvestrant-insensitivity of B16 melanoma cells used in Figure 3C. (G) Oophorectomized mice growing flank A7C11 breast tumors were treated with vehicle (Vh) vs. estradiol (E2). When tumors reached 4,100 mm³, mice were euthanized, spleens were mechanically dissociated and percentages of CD45⁺CD11b⁺MHC-II⁺ cells were quantified. Pooled from 4 mice/group).

Supplemental Figure Legend 2. (A) Dilution of Cell Trace Violet in labeled T cells activated with anti-CD3/CD28 beads co-cultured with a 1:2 ratio of G-MDSCs isolated from ID8-*Defb29/Vegf-a* tumor-bearing mice supplemented with estradiol (E2) or vehicle (Vh). (B) 2.5 X 10⁶ bone marrow cells from wild-type mice were cultured 50% 10% FBS RPMI media/50% filtered 10% RPMI media conditioned by ID8-*Defb29/Vegf-a* cells, in the presence of Vehicle (Vh; 0.1% DMSO); 10 ng/mL of estradiol (E2); or 2 mM MPP. Drugs were freshly added at day

3 and expanded MDSCs were analyzed by flow cytometry. (C) Expansion of human HLA-DR⁻ and HLA-DR⁺ cells from lung cancer patient bone marrow cultured in GM-CSF+IL6 and treated with Vh vs. 5 μ M MPP. Gated on live CD45⁺ cells. Representative of 3 patients.