Supplemental Figure Legends

Supplemental Figure 1. Antitumor efficacy of PD-L1 blockade alone, DCs alone, and pomalidomide plus dexamethasone in the mouse myeloma model

(A) Representative images of mice treated with PD-L1 blockade alone (200μg/mouse), DCs alone (1 × 106 per mouse), and pomalidomide (0.06 mg/kg/day) + dexamethasone (0.6 mg/kg/day). (B) Data are shown as the mean ± standard error of the mean (SEM) and are representative of two independent experiments. Treatment with PD-L1 blockade did not show significant difference in the tumor growth compared to the PBS control. In contrast, the tumor-bearing mice treated with DC vaccination or pomalidomide with dexamethasone exhibited significant inhibition of tumor growth compared to the PBS control (*, $P < 0.05$ on day 19). Experiments used five mice per group.

Supplemental Figure 2. (A) Representative images of mice treated with DCs + pomalidomide with dexamethasone + PD-L1 blockade showing significant inhibition of tumor growth compared to the PBS control, DCs + pomalidomide with dexamethasone, and pomalidomide with dexamethasone + PD-L1 blockade groups. (B) Table with levels of significance (p values) for time points at which the groups differed significantly are provided. Experiments used five mice per group.

Supplemental Figure 3. Decreased frequency of PD-1, PD-L1, and CTLA-4 expression in the tumor microenvironments of mice after treatment with pomalidomide/dexamethasone and PD-L1 blockade

Using flow cytometry, we measured the expression levels of PD-1, PD-L1, and CTLA-4 in the tumor microenvironment of mice at days 31 and 34 after treatment. We found that there was a significant reduction in the level of PD-1 expression on CD3+ T cells in the tumor microenvironment compared to the PBS control group (Supplemental Figures 3A and 3B). Treatment with pomalidomide with

dexamethasone + PD-L1 blockade led to significantly reduced levels of PD-L1 expression in tumor microenvironment (Supplemental Figures 3C and 3D) and CTLA4 expression on CD3+ T cells in the tumor microenvironment (Supplemental Figures 3E and 3F) compared to the DCs + pomalidomide with dexamethasone group or the PBS control group. Representative mean fluorescence intensity histogram show marker expression levels (shaded) compared to those of the isotype controls (black line). These results demonstrated that treatment with pomalidomide/dexamethasone + PD-L1 blockade decreased the frequency of PD-1, PD-L1 and CTLA-4 expression in the tumor microenvironments of treated mice. Data are representative of three independent experiments.

Supplemental Figure 4. Induction of effector memory T cells and effector NK cells in the spleens of mice treated with a combination of DCs plus pomalidomide/dexamethasone and PD-L1 blockade

Using flow cytometry, we measured the proportions of effector memory T cells and effector NK cells in the spleens of mice at days 31 and 34 after treatment. Treatment with DCs + pomalidomide with dexamethasone + PD-L1 blockade resulted in significantly increased percentages of splenic effector memory T cells (A and B) and effector NK cells (C and D) compared to the other groups. (*, $P < 0.05$; **, $P < 0.01$). Data are representative of three independent experiments.