**Supplemental Figure S1. PD-L1, PD-1, and CD80 expression by bone marrow-derived macrophages.** Bone marrow monocytes were cultured with M-CSF for one week for the enrichment of macrophages and plated for adherent culture overnight. They were then detached and processed for flow cytometric analysis of PD-L1 (A), PD-1 (B), and CD80 (C) expression. Histograms are shown in where isotype stain = gray filled and solid line = cultured macrophages.

**Supplemental Figure S2. PD-L1 antibody treatment of human macrophages results in phenotypic changes consistent with those seen in murine macrophages.** Macrophages were treated with medium only, an irrelevant isotype antibody, or PD-L1 antibody for 6 days, and images were taken of the cells to assess changes in morphology. A non-commercialantibody (A) and Tecentriq (B) were both tested, and changes in confluence (C) were measured every 3 hours for the 6 days with an IncuCyte ZOOM live cell imaging system. An MTT was performed to measure survival of the cells and mean absorbances of MTT substrate were compared statistically with one-way ANOVA and Prism7 software (D). Lastly, surface expression of co-stimulatory molecules (CD40 and CD86) by macrophages treated with the non-commercial antibody (D) and with Tecentriq (F) was compared to control macrophages by flow cytometry using two-way ANOVA and Prism7 software. Statistically significant differences were denoted as P-value \* < 0.05, \*\* < 0.005, \*\*\* < 0.0005 and \*\*\*\* < 0.0001, with similar results obtained in 2 independent experiments.

**Supplemental Figure S3. Morphology of macrophages treated with control antibodies.** Macrophages were incubated with medium only, irrelevant isotype antibody, a macrophage-specific antibody (CD11b), Fc-blocking antibody, or pre-treated with Fc-blocking antibody for 1 hour before treatment with PD-L1 antibody. Photographs of the macrophages were taken after 48 hours with a confocal microscope.

**Supplemental Figure S4. Control antibody treatments for macrophage proliferation and co-stimulatory molecule expression.** Macrophages were incubated with irrelevant isotype antibody, macrophage-specific antibody (CD11b), Fc-blocking antibody, or pre-treated with Fc-blocking antibody before treatment with PD-L1 antibody. After 48 hours, proliferation measured by EdU incorporation and surface expression of co-stimulatory molecules (CD86 and MHC II) was compared by flow cytometry with two-way ANOVA and Prism7 software. Statistically significant differences were denoted as P-value \*\*\*\* < 0.0001, and similar results were obtained in 2 independent experiments.

**Supplemental Figure S5. LPS stimulation of macrophages fails to promote macrophage survival or morphological changes.** Macrophages were incubated with medium only, irrelevant isotype antibody, irrelevant isotype antibody + LPS, or PD-L1 antibody. After 6 days, images of the macrophages were taken (A). Changes in well confluence were measured every 3 hours for 6 days with an IncuCyte ZOOM live cell imaging system (B), and an MTT was performed to measure survival of the cells after the 6 days. Mean absorbances of MTT substrate were compared statistically with one-way ANOVA and Prism7 software (C), with statistically significant differences denoted as P-value \*\*\* < 0.0005. Similar results were obtained in 2 independent experiments.

**Supplemental Figure S6. Ingenuity Pathway Analysis revealed altered cell signaling pathways in PD-L1 antibody-treated macrophages consistent with changes observed in both *in vitro* and *in vivo* studies.** Macrophages were treated with medium only, irrelevant isotype antibody, or PD-L1 antibody for 24 hours prior to RNA extraction for RNA sequencing analysis. Ingenuity Pathway Analysis was used to identify altered signaling pathways, of which included (A) Type I Diabetes Mellitus (B) LXR/RXR activation, (C) PPAR signaling, (D) TNFR2 signaling (E) Apoptosis signaling, and (F) Calcium-induced T lymphocyte apoptosis signaling. The key is as follows: red is upregulated, and green is downregulated. These data were generated using macrophages from 9 mice, with 3 mice in each treatment group.