

**Supplementary Figure 1** Phenotypic characterization of the circulating CD8+PD-1+ lymphocytes from melanoma patients. Peripheral blood mononuclear cells (PBMC) from patients with metastatic melanoma (n=18) were thawed, and rested 16 h in T cell media without cytokines. Cells were harvested, stained with the antibodies indicated, and acquired. Flow cytometry data were analyzed using FlowJo software. Data were gated on live cells (PI negative), single cells, and CD3+CD8+PD-1+ lymphocytes. Gates were set based on fluorescence minus one (FMO) controls. Each dot represents one sample. The mean ± s.e.m. is plotted.