

**Figure S1.** Severe inflammation in mice with T cell-specific *Pik3c3/Vps34*-deficiency. (**A**) Quantification of serum IL12 p70, TNF, IFNG/IFN-, CCL2/MCP-1, IL10, and IL6 levels measured by cytometric bead array. Results from three independent experiments (6-week-old mice) were pooled and plotted as mean ± SEM (n=6-8). \*p<0.05, \*\*p<0.01. (**B**) Spleen cells were stained with anti-ITGAM/CD11b and anti-GSR/Gr-1 mAbs. The gated cells shown in the plots are MDSCs (ITGAM+GSR+). A summary of the frequency of MDSC is shown to the right.



**Figure S2.** Quantification of OCR and ECAR. **(A)** CD4+ T cell basal respiration and maximal respiratory capacity. **(B)** CD4+ T cell glycolysis and glycolytic capacity. **(C)** CD8A+ T cell basal respiration and maximal respiratory capacity. **(D)** CD8A+ T cell glycolysis and glycolytic capacity. Results are from 5-7 mice per group and 2 independent experiments. The data shown are the average ± SEM. \*p<0.05,\*\*\*p<0.001.



**Figure S3.** MitoView Green MFI change after PMA-ionomycin stimulation. Splenocytes were prepared and stained with MitoView Green (100 nM) with anti-CD3E, anti-CD4, and anti-CD8A mAbs according to the manufacturer’s protocols after 5 h stimulation with PMA and ionomycin. Summary of Mitoview MFI fold-change after PMA and ionomycin stimulation in CD4+ T cells **(A)** and CD8A+ T cells **(B)**. Results are from 5-7 mice per group and two independent experiments. The data shown are the average ± SEM. \*p<0.05.