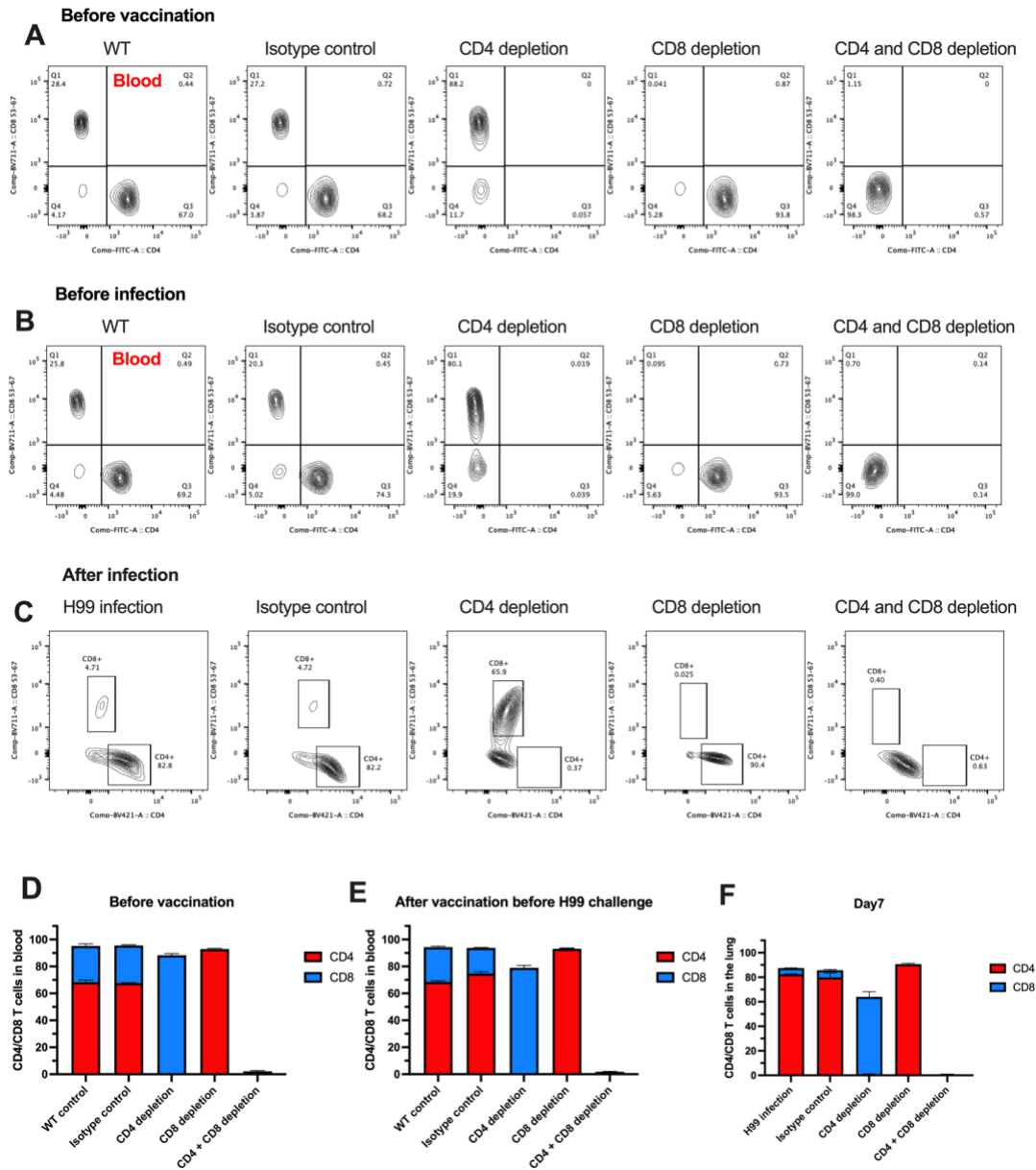
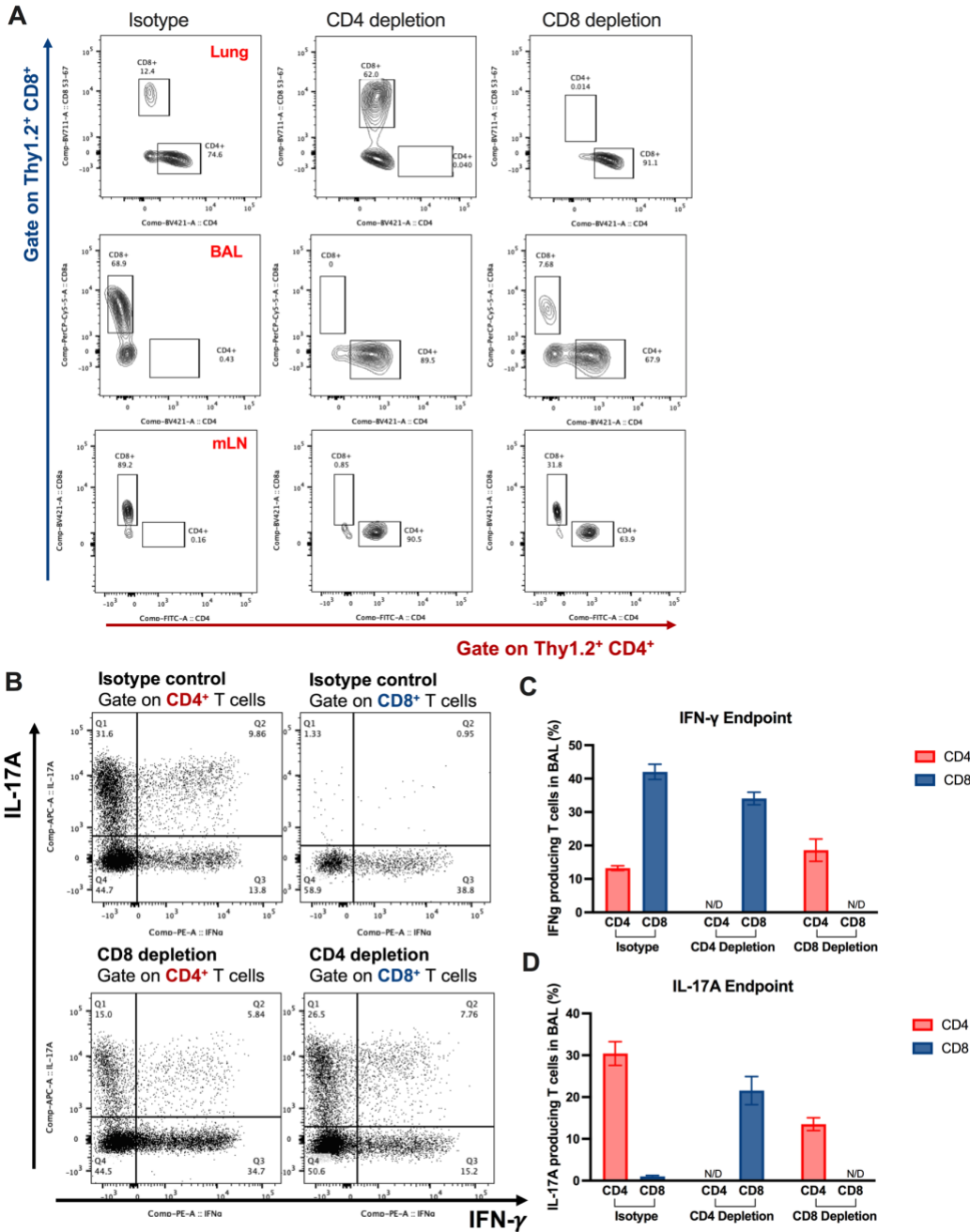


## Supplementary materials



**Figure S1. (A and B)** Detection of CD4<sup>+</sup> and CD8<sup>+</sup> T cells by flow cytometry prior to first vaccination (day -43) **(A)** and prior to challenge infection (day -1) **(B)** in mice injected with either CD4 antibody, CD8 antibody or isotype antibody. Representative FACS plots of CD4<sup>+</sup> and CD8<sup>+</sup> T cells in blood samples of CD4<sup>+</sup> T cells depleted mice, CD8<sup>+</sup> T cells depleted mice, double depleted mice, isotype control treated mice and wild type infection only mice were shown. **(C)**

Efficient depletion of CD4<sup>+</sup> and CD8<sup>+</sup> T cells in mice was confirmed by flow cytometry at day 7 post-challenge. Representative FACS plots of CD4<sup>+</sup> and CD8<sup>+</sup> T cells from lung tissues of CD4<sup>+</sup> T cells depleted mice, CD8<sup>+</sup> T cells depleted mice, double depleted mice, isotype control mice and wildtype infection only mice were shown. Each cell population was identified as CD45<sup>+</sup>, 4',6-diamidino-2-phenylindole (DAPI)-negative live leukocytes. CD4<sup>+</sup> T cells was gate as CD11b<sup>-</sup>, CD4<sup>+</sup>, CD8<sup>-</sup>; and CD8<sup>+</sup> T cells were gated as CD11b<sup>-</sup>, CD4<sup>-</sup>, CD8<sup>+</sup>. **(D-F)** Percentages of CD4<sup>+</sup> and CD8<sup>+</sup> T cell in mouse blood at different times in the course of vaccination study: before vaccination **(D)**, before H99 challenge **(E)**, and at day 7 post-challenge **(F)**.



**Figure S2.** (A) At the endpoint of experiment (day 70), representative FACS plots of CD4<sup>+</sup> T cells and CD8<sup>+</sup> T cells in the lung, BALF, lung-draining lymph nodes in isotype control mice (left), CD4<sup>+</sup> T cells depleted mice (middle), and CD8<sup>+</sup> T cells depleted mice (right). (B) Representative FACS plots of cytokine production gate on CD4<sup>+</sup> T cells or CD8<sup>+</sup> T cells in isotype control mice

(top), CD4 depleted mice (bottom), and CD8 depleted mice (bottom) at endpoint. **(C and D)** Cytokine expression at endpoint analyzed by ICCS. Plots of cytokine production in CD4<sup>+</sup> T cells gated as Thy1.2<sup>+</sup> CD4<sup>+</sup> CD8<sup>-</sup> T cells. Plots of cytokine production in CD8<sup>+</sup> T cells gated as Thy1.2<sup>+</sup> CD4<sup>-</sup> CD8<sup>+</sup> T cells. The frequencies of IFN- $\gamma$  **(C)**, IL-17A **(D)** producing CD4<sup>+</sup> or CD8<sup>+</sup> in BALF were analyzed as shown in panel.