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Supporting Information for

Mouse models susceptible to HCoV-229E and HCoV-NL63 and cross protection from challenge with SARS-CoV-2

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This PDF file includes:

Figures S1 to S3
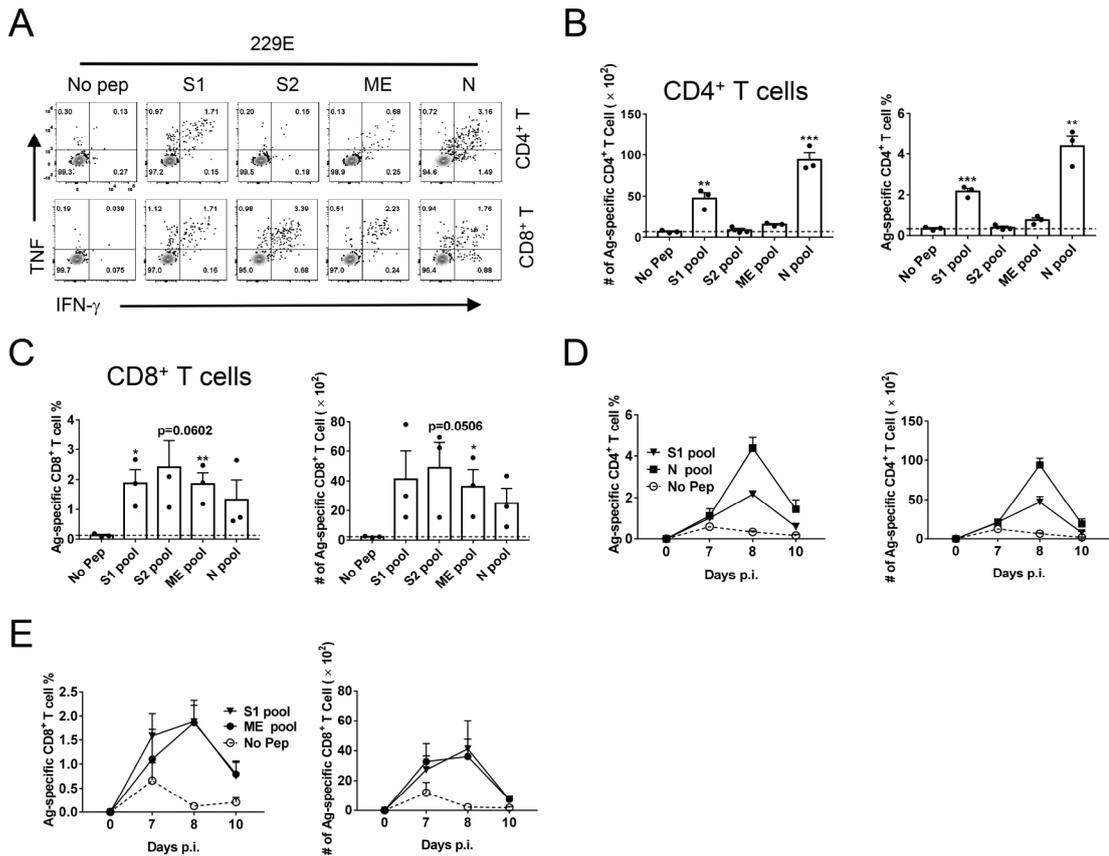
Fig. S1. 229E infection induced virus specific T cell response in IFNAR$^{-/-}$BALB/c mice.

(*A-C*) Ad5-hAPN-transduced IFNAR$^{-/-}$BALB/c mice were infected with 1.5 × 10^5 TCID$_{50}$ of 229E. To identify 229E T-cell responses, single-cell suspensions were prepared from the BALF of transduced/ infected   IFNAR$^{-/-}$ BALB/c mice and stimulated with 2 µM structural protein peptide pools for 5-6 h in the presence of brefeldin A. Flow plots ((*A*), 8 d.p.i.), and summary of frequencies and cell numbers of 229E specific CD4$^+$ (*B*) and CD8$^+$ T cells (*C*) (determined by IFN-γ intracellular staining) are shown (n = 3 mice per time point).

(*D* and *E*) To determine the kinetics of virus-specific T cell responses in 229E infected IFNAR$^{-/-}$BALB/c mice, single-cell suspensions were prepared from the BALF of transduced/ infected   IFNAR$^{-/-}$ BALB/c mice at indicated time points and stimulated with 2 µM S1, ME or N protein peptide pools for 5-6 h in the presence of brefeldin A. The frequencies (left panel) and cell numbers (right panel) of 229E-specific CD4$^+$ (*D*) and CD8$^+$T(*E*) cells from BALF are shown (n= 3 mice per time point).
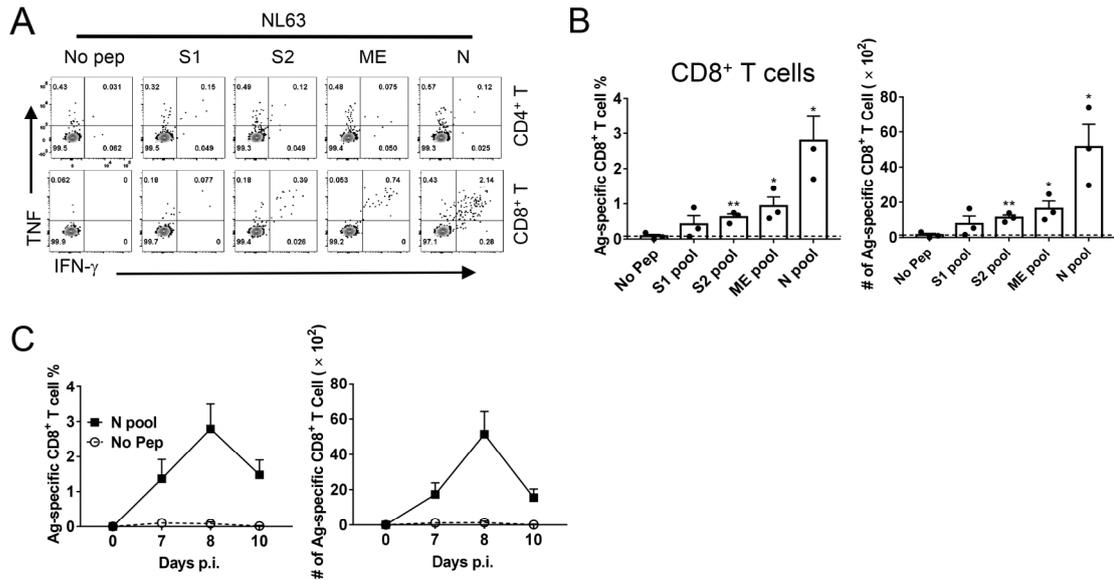
Fig. S2. NL63 infection induced virus specific T cell response in IFNAR$^{-/-}$ BALB/c mice.

(*A* and *B*) Ad5-hACE2-transduced IFNAR$^{-/-}$BALB/c mice were infected with 1.0×10^4 PFU of NL63. To identify NL63 T-cell responses, single-cell suspensions were prepared from the BALF of transduced/infected IFNAR$^{-/-}$ BALB/c mice and stimulated with 2 µM structural protein peptide pools for 5-6 h in the presence of brefeldin A. Flow plots ((*A*), 8 d.p.i.), and summary of frequencies and cell numbers of NL63 specific CD8$^+$ T cells (*B*) (determined by IFN-γ intracellular staining) are shown (n = 3 mice per time point).

(*C*) To determine the kinetics of virus-specific T cell responses in IFNAR$^{-/-}$ BALB/c mice, single-cell suspensions were prepared from the BALF of transduced/infected IFNAR$^{-/-}$ BALB/c mice at indicated time points and stimulated with 2 µM N protein peptide pools for 5–6 h in the presence of brefeldin A. The frequencies (left panel) and cell numbers (right panel) of NL63 specific CD8$^+$ T cells from BALF are shown (n= 3 mice per time point).
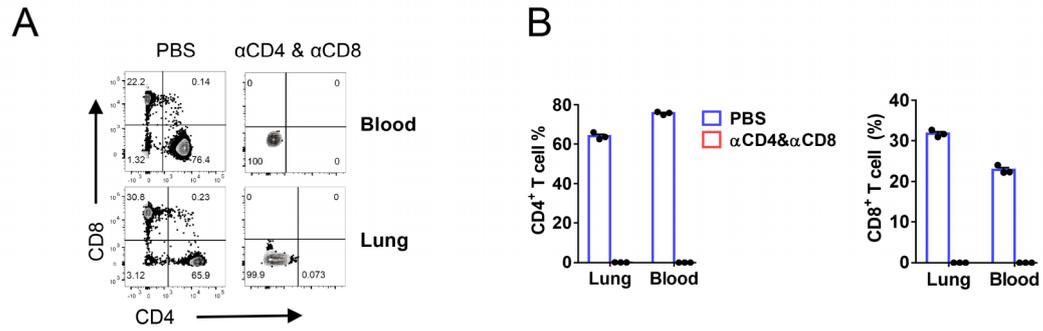
Fig. S3. T cells depletion by anti-CD4 and anti-CD8 antibody in mice.

(*A* and *B*) To determine T-cell depletion efficacy in mice, mice were treated intraperitonelly with 500 µg anti-CD4 and 100 µg anti-CD8 antibody. Two days later, single-cell suspensions were prepared from blood and lungs. Flow plots (*A*) and summary of frequencies of CD4$^+$ and CD8$^+$ T cells (*B*) in blood and lungs are shown (n = 3 mice).