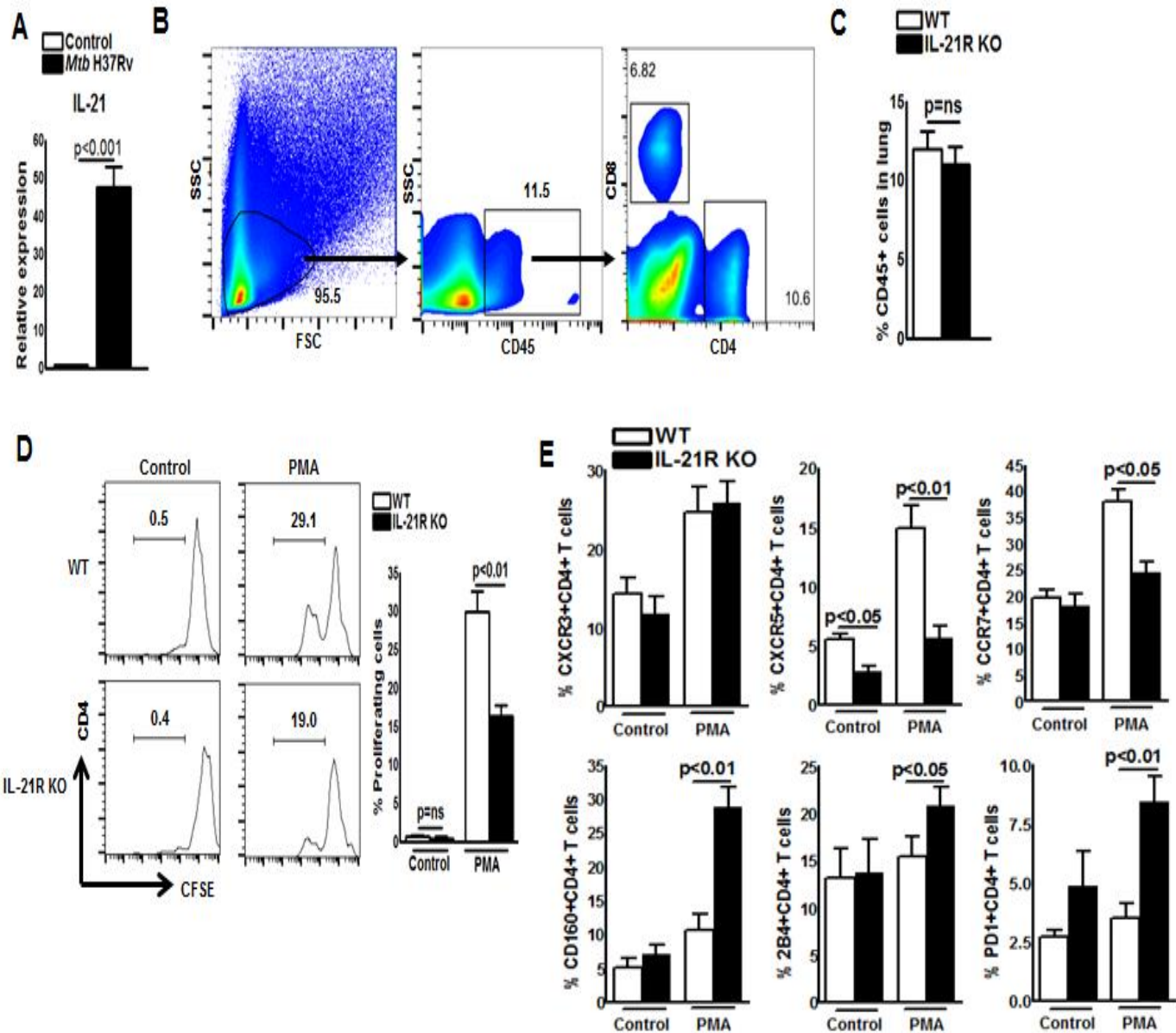
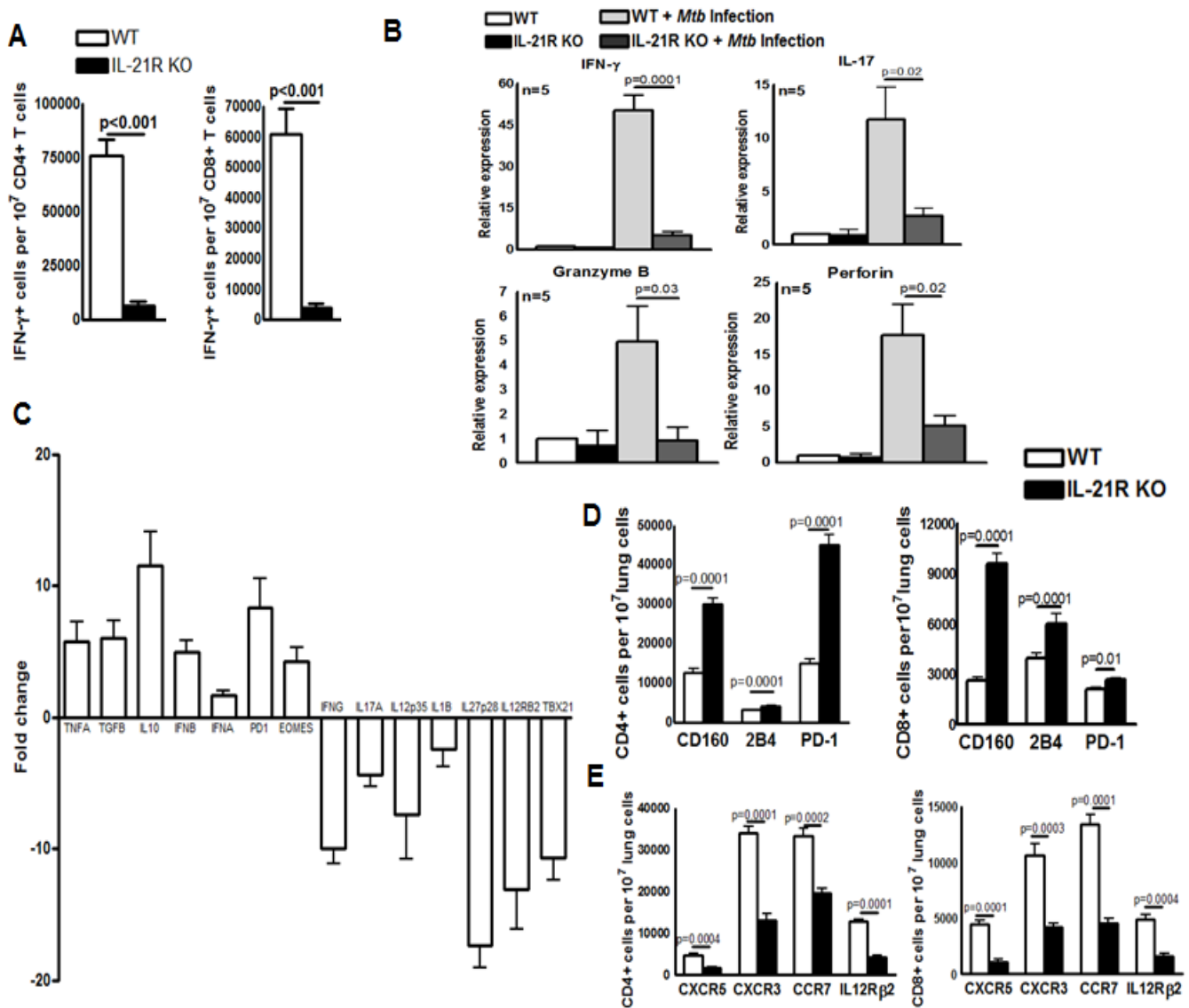


Supplemental Figure 1



Supplemental Fig 1. IL-21 during *Mtb* infection. **A.** WT mice were infected with 50-100 CFU of H37Rv by aerosol. Three months after infection, IL-21 expression in the control and *Mtb* infected mice lungs was quantified by real time PCR. **B.** A representative flow cytometry plot of gating strategy. **C.** WT and IL-21R KO mice lungs were quantified for CD45+ cells by flow cytometry. **IL-21R is essential for effector function of T cells. D and E.** Lung mononuclear cells from WT and IL-21R KO mice (both C57BL/6NJ background) were labelled with CFSE and stimulated with the phorbol 12-myristate 13-acetate (PMA) and Ionomycin (500 ng/ml each). After 72 hours, the percentages of **D.** proliferating CD4+ T cells. **E.** and CD4+ cells that express CD160, 2B4, PD1, CXCR3, CXCR5 and CCR7 were quantified.

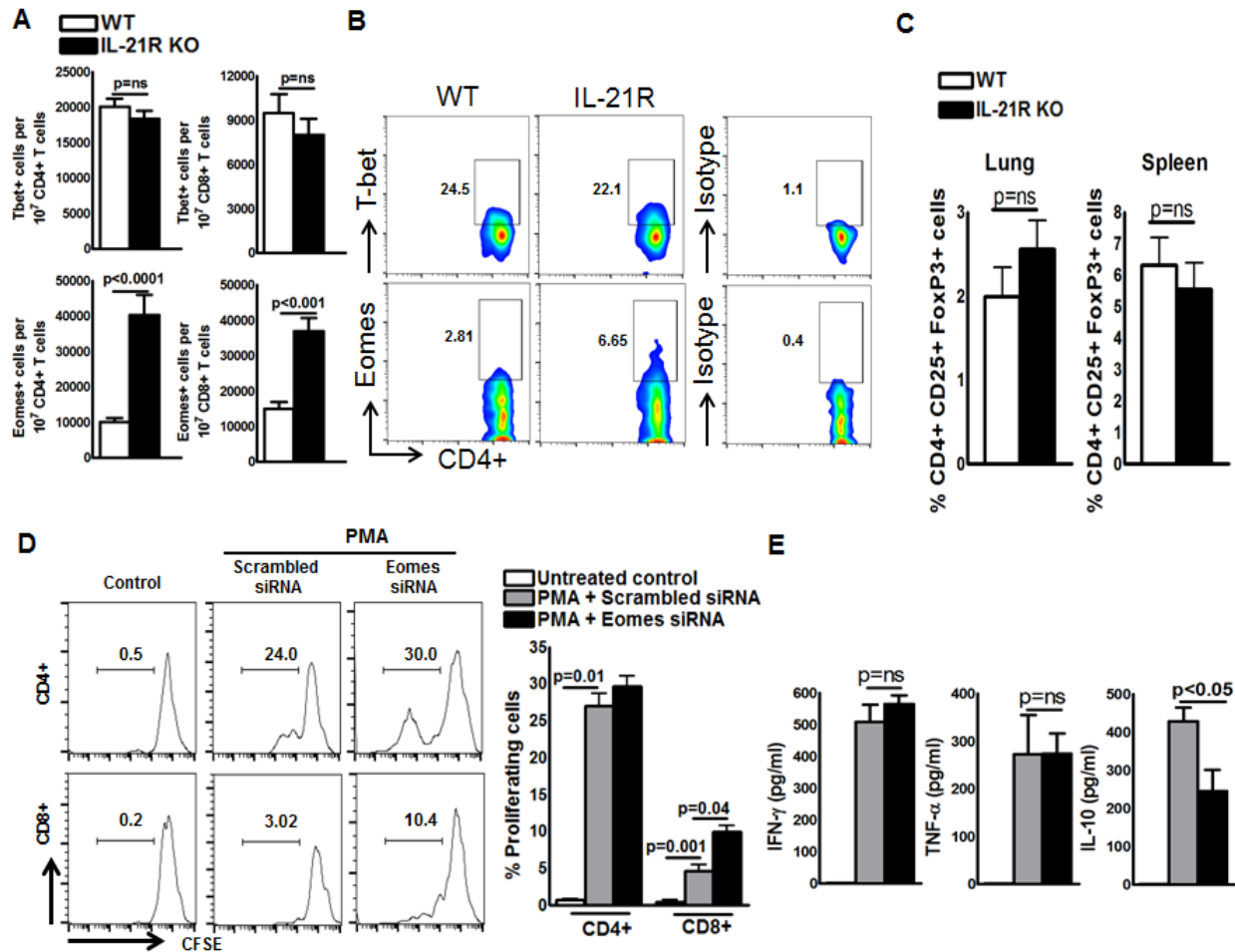
Supplemental Figure 2



Supplemental Fig 2. IL-21 is essential for optimal T-cell responses during *Mtb* infection.

WT and IL-21R KO mice (both C57BL/6NJ background) were infected with 50-100 CFU of H37Rv by aerosol. Three months after infection, **A**. The number of IFN- γ + CD4+ and CD8+ cells in the spleen was measured by flow cytometry. **B and C**. Expression of various cytokines and transcription factors in the lung mRNA was determined by real-time PCR. **D and E**. Percentage of CD160, 2B4, PD1, CXCR3, CXCR5 and CCR7 by lung CD4 and CD8 T cells was determined by flow cytometry. Data are representative of two independent experiments. Three mice per group were used in each independent experiment. Mean values and SE are shown.

Supplemental Figure 3



Supplemental Fig. 3 Increased Eomes expression by T-cells of *Mtb* infected IL-21R KO mice. **A-B.** WT and IL-21R KO mice (both C57BL/6NJ background) were infected with 50-100 CFU of H37Rv by aerosol. Three months after infection in lungs **A.** The frequency of T cells expressing T-bet and Eomes. **B.** A representative flow cytometry plot. **IL-21 does not affect FoxP3+ T regs during *Mtb* infection.** **C.** The frequency of CD4+ T cells expressing CD25+FoxP3+ in the lung and spleen was determined by flow cytometry. **D and E. Effect of Eomes siRNA on PMA and Ionomycin stimulated WT mice lung CD4+ T-cell responses.** Lung mononuclear cells from WT mice were labelled with CFSE and stimulated with PMA and Ionomycin (500 ng/ml each) in the presence or absence siRNA to Eomes or scrambled siRNA. After 72 hours, supernatants were collected and flow cytometry was performed on cells to determine **D.** T cell proliferation. **E.** IFN- γ , TNF- α and IL-10 levels in culture supernatants were determined by ELISA. Data are representative of three independent experiments. Pooled cells from two mice were used in each independent experiment. Mean values, p values and SEs are shown.

Supplemental Table I: List of primers used in this study

S.No	Gene name	Mouse Primer Sequences
1.	IFN- γ	Forward: TCA AGT GGC ATA GAT GTG GAA GAA Reverse: TGG CTC TGC AGG ATT TTC CAT G
2.	TNF- α	Forward: CAT CTT CTC AAA ATT CGA GTG ACA A Reverse: TGG GAG TAG ACA AGG TAC AAC CC
3.	IL-17	Forward: CTC CAT AAG GCC CTC AGA CTA C Reverse: AGC TTT CCC TCC GCA TTG ACA CAG
4	Eomes	Forward: CCA CTG GAT GAG GCA GGA GAT T Reverse: GTC CTC TGT CAC TTC CAC GAT G
5	T-bet	Forward: CCA CCT GTT GTG GTC CAA GTT C Reverse: CCA CAA ACA TCC TGT AAT GGC TTG
6	IL-12R β 2	Forward: TGT GGG GGT GGA GAT CTC AGT Reverse: TCT CCT TCC TGG ACA CAT GA
7	IL-1 β	Forward: CAA CCA ACA AGT GAT ATT CTC CAT G Reverse: GAT CCA CAC TCT CCA GCT
8	IL-27p28	Forward: TGT CCA CAG CTT TGC TGA AT Reverse: CCG AAG TGT GGT AGC GAG G
9	IL-12p35	Forward: CTT AGC CAG TCC CGA AAC CT Reverse: TTG GTC CCG TGT GAT GTC T
10	TGF- β	Forward: GGA TAC CAA CTA TTG CTT CAG CTC C Reverse: AGG CTC CAA TAT TAG GGG CAG GGT C
11	IL-10	Forward: GGT TGC CAA GCC TTA TCG GA Reverse: ACC TGC TCC ACT GCC TTG CT
12	IFN- α	Forward: GCT AGG CTC TGT GCT TTC CT Reverse: TCC TGC GGG AAT CCA AAG TC
13	IFN- β	Forward: CGT GGG AGA TGT CCT CAA CT Reverse: AGA TCT CTG CTC GGA CCA CC
14	Granzyme B	Forward: ATC CTG CTC TGA TTA CCC ATC GT Reverse: ATG GAT TAT GAA GCC AGT CTT TGC
15	Perforin	Forward: AAT ATC AAT AAC GAC TGG CGT GT Reverse: CAT GTT TGC CTC TGG CCT A
16	PD1	Forward: ACC CTG GTC ATT CAC TTG G Reverse: CAT TTG CTC CCT CTG ACA CTG
17	IL-21	Forward: GCC TCC TGA TTA GAC TTC GTC AC Reverse: CAG GCA AAA GCT GCA TGC TCA C
18	β -Actin	Forward: CTC TGG CTC CTA GCA CCA TGA AGA Reverse: GTA AAA GAC AGC TCA GTA ACA GTC CG