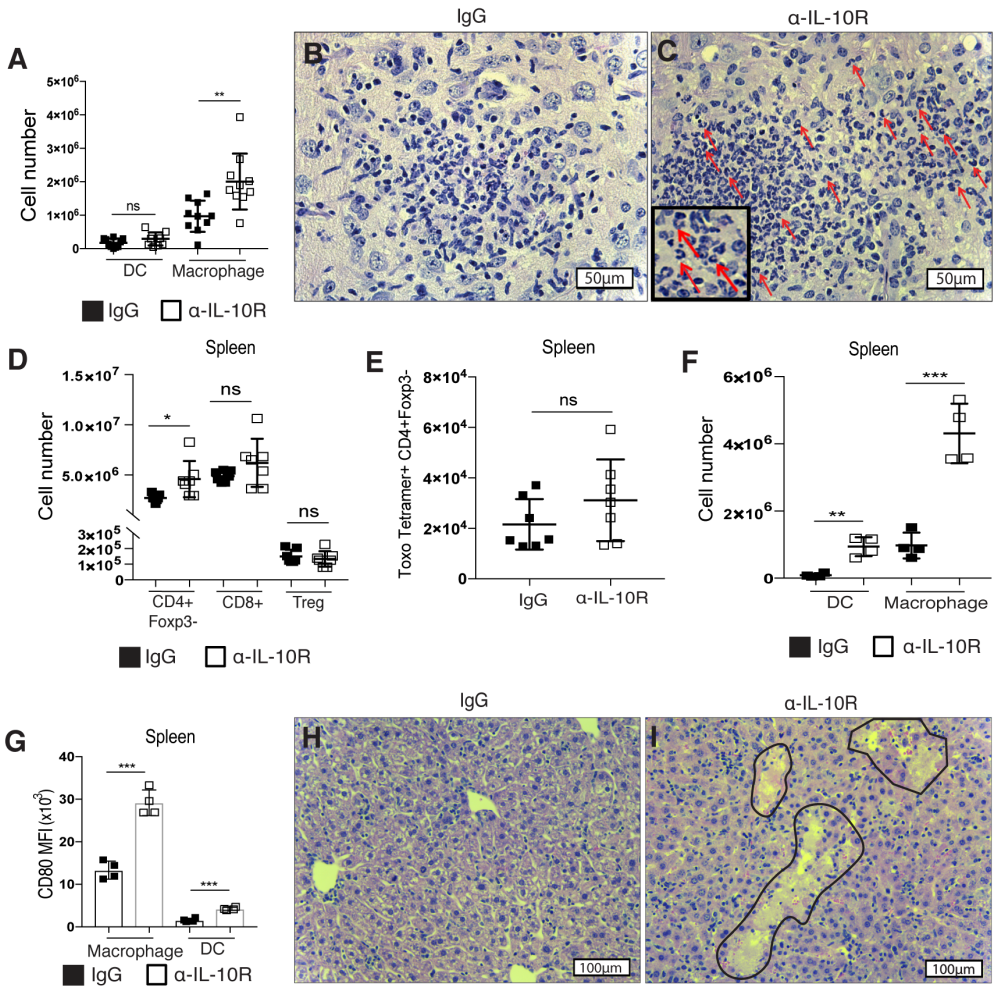
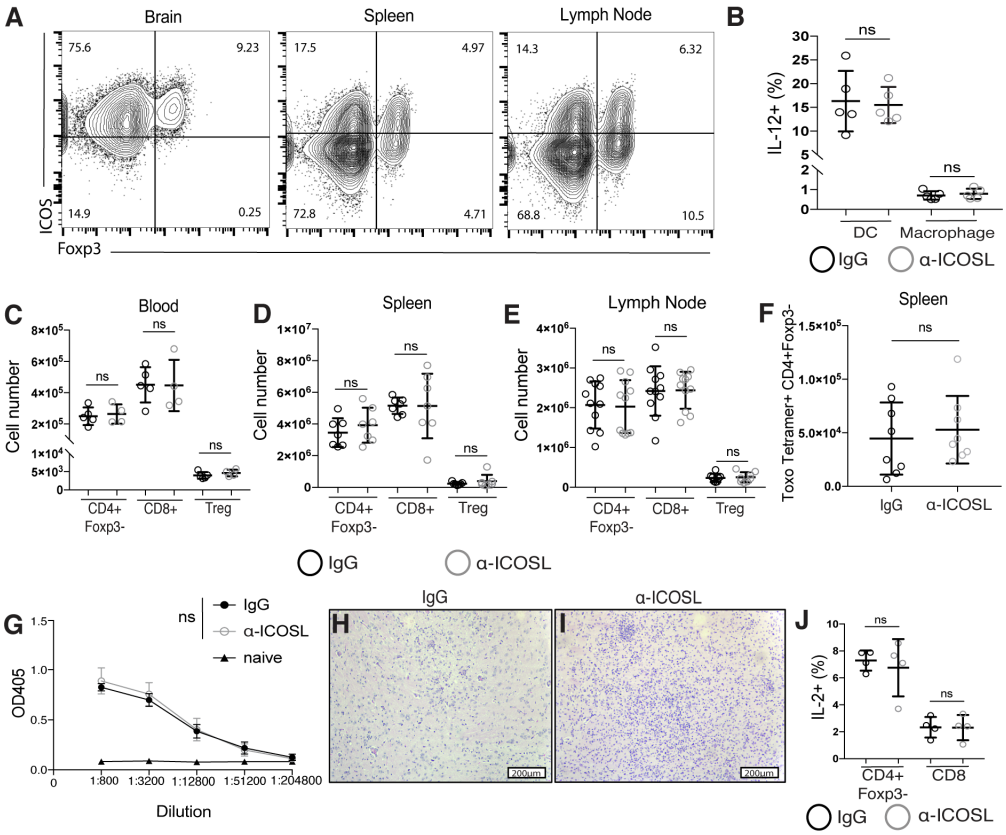
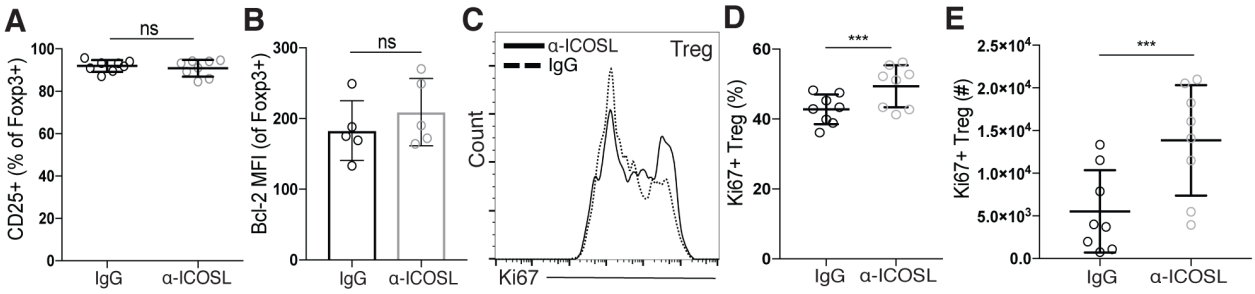


Supplementary Figure 1. IL-10R blockade results in increased APC activation and immunopathology in the periphery along with increased numbers of infiltrating macrophages in the brain. (**A**) Total number of infiltrating DCs and macrophages in the brains of chronically infected control and α-IL-10R-treated mice analyzed by flow cytometry (n=5 per group, data is pooled from two independent experiments and analyzed by randomized block ANOVA). (**B-C**) Representative H&E stained brain sections from chronically infected control (**B**) and α-IL-10R-treated (**C**) mice. Red arrows indicate the presence of neutrophils in the brain parenchyma. (**D**) Total T cell numbers in the spleens (n=3-4 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA) and (**E**) parasite tetramer+ CD4 T cells in the spleens of control and α-IL-10R-treated mice (n=3-5 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA). (**F**) Total myeloid cell numbers in the spleens analyzed by flow cytometry (n=4 per group, data is representative of three independent experiments and analyzed using Student's t test) of control and α-IL-10R-treated mice. (**G**) The MFI of CD80 on macrophages and DCs in the spleen (n=4 per group, data is representative of two independent experiments and analyzed using Student's t test). (**H-I**) Representative H&E stained sections of the livers of chronically infected control and α-IL-10R-treated mice. α-IL-10R-treated mice show areas of necrosis (outlined in black) not seen in controls. * denotes $p<0.05$, ** denotes $p<0.01$, and *** denotes $p<0.001$ for all panels.



Supplementary Figure 2. ICOSL blockade leads to increased numbers of DCs and IFNγ-producing CD4+ and CD8+ T cells in the brain, with no changes in peripheral T cell responses. (**A**) CD4 T cells were isolated from the brain, spleen, and cervical lymph nodes of chronically infected mice. Representative ICOS expression is shown on effector CD4 and regulatory T cells. Cells are pre-gated on $CD3^{+}CD4^{+}$ live singlets. Plots are representative of three independent experiments of 2-4 mice. (**B**) The frequency of IL-12+ DCs and infiltrating macrophages isolated from the brain and measured by flow cytometry following *ex vivo* incubation with BFA (n=5 per group, data is representative of 3 independent experiments and analyzed using Student's t test). (**C-E**) T cell numbers analyzed by flow cytometry after isolation from the blood (**C**) (n=4-5 per group, data is representative of two independent experiments and analyzed using Student's t test), spleen (**D**) (n=3-4 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA), and cervical lymph nodes (**E**) (n=3-4 per group, data is pooled from 3 independent experiments and analyzed using randomized block ANOVA) after α-ICOSL blockade. (**F**) Parasite-specific CD4 effector T cells were stained for flow cytometry using an MHCII-peptide tetramer (n=4 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA). (**G**) Parasite-specific total IgG was measured by ELISA in the serum of chronically infected mice after α-ICOSL blockade (n=4-5 mice per group, data is representative of two independent experiments and analyzed using two-way ANOVA). (**H-I**) Representative H&E stained brain sections from chronically infected mice following control or α-ICOSL blockade. (**J**) IL-2 production was assessed following *ex vivo* restimulation of T cells isolated from the brains of control or α-ICOSL treated mice.* denotes $p<0.05$, ** denotes $p<0.01$, and *** denotes $p<0.001$ for all panels.



Supplementary Figure 3. ICOSL blockade leads to more Ki67+ T_{regs} in the brain independent of changes in T_{reg} expression of CD25 or Bcl-2. (**A-E**) T cells were isolated from the brains of chronically infected C57BL/6 mice following control or α-ICOSL treatment and stained for flow cytometry. (**A**) Frequency of CD25+ T_{regs} (n=4 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA) and (**B**) MFI of Bcl-2 in T_{regs} from control and α-ICOSL treated mice (n=5 per group, data is representative of five independent experiments and analyzed using Student's t-test). (**C**) Representative histogram showing Ki67 expression in T_{regs} and (**D**) Frequency of Ki67+ T_{regs} isolated from the brains of control and α-ICOSL treated mice (n=3-5 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA). (**E**) Number of Ki67+ T_{regs} in the brains of control and α-ICOSL treated mice (n=3-5 per group, data is pooled from two independent experiments and analyzed using randomized block ANOVA). * denotes $p<0.05$, ** denotes $p<0.01$, and *** denotes $p<0.001$ for all panels.