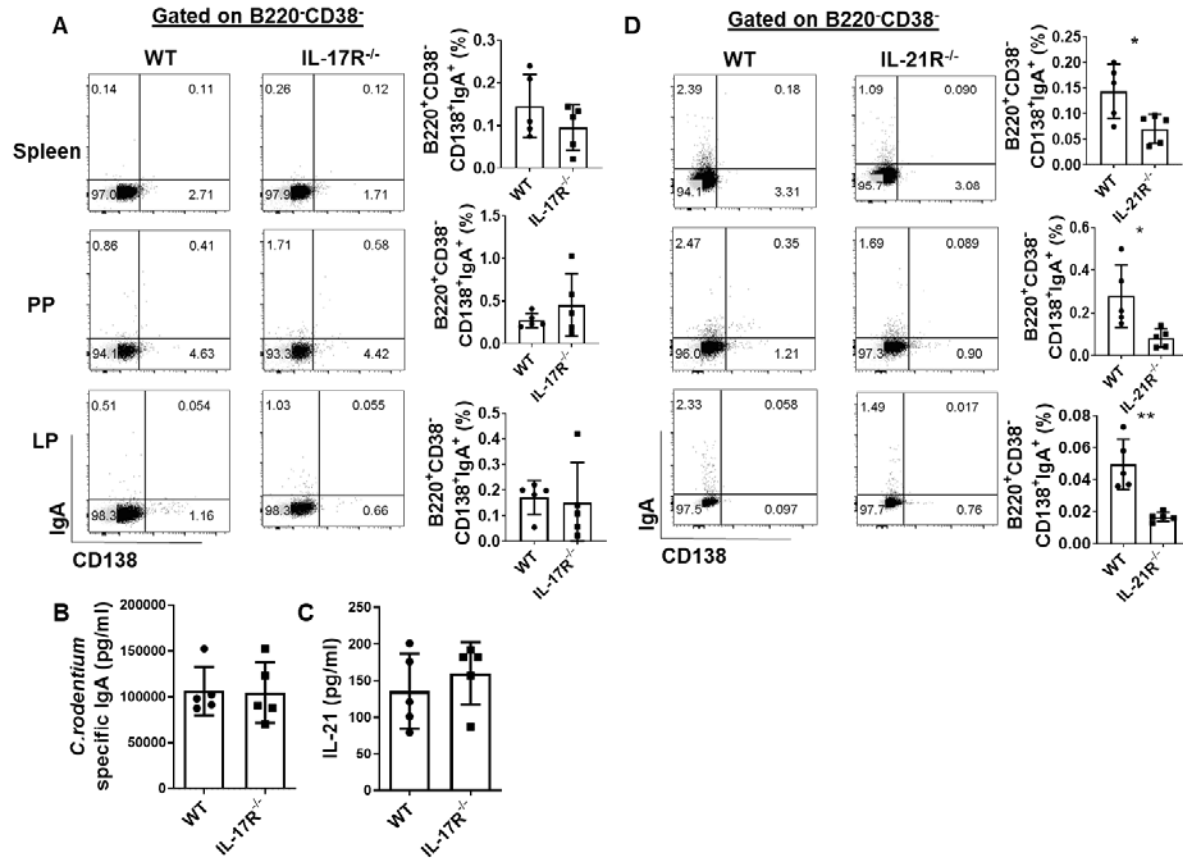
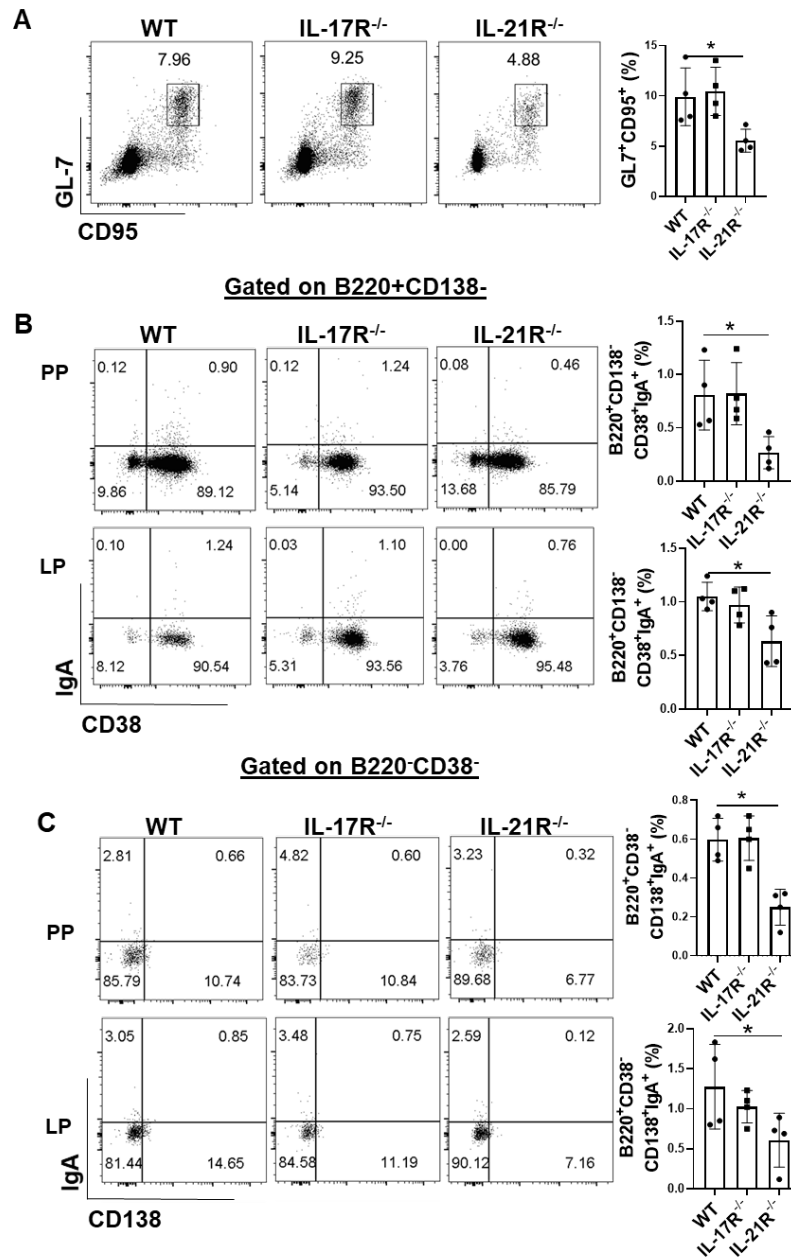


Supplementary Figure 1. Transfer of microbiota specific Th17 cells promotes IgA⁺ plasma cells in TCRβ/δ^{-/-} mice. Splenic CBir1 Tg Th1 (1×10^6) or Th17 (1×10^6) cells were transferred to TCRβ/δ^{-/-} mice (n = 5/group) i.v.. (A) PPs were stained with DAPI and anti-CD4 from TCRβ/δ^{-/-} mice received Th1 or Th17 cells. (B) Mice were sacrificed on day 21, and the CD19⁻CD38⁻CD138⁺IgA⁺ B cells in spleens (SP), PP, and LP were analyzed by FACS. (C) IL-17 and IL-21 expression in *in vitro* generated-CBir1 Tg Th17 cell by FACS. (D) T cell expression of IL-17 and IL-21 in PP and LP from TCRβ/δ^{-/-} mice 3 weeks post Th17 cell transfer. One representative of 2-3 experiments with similar results was shown. * $p < 0.05$. One-way ANOVA.

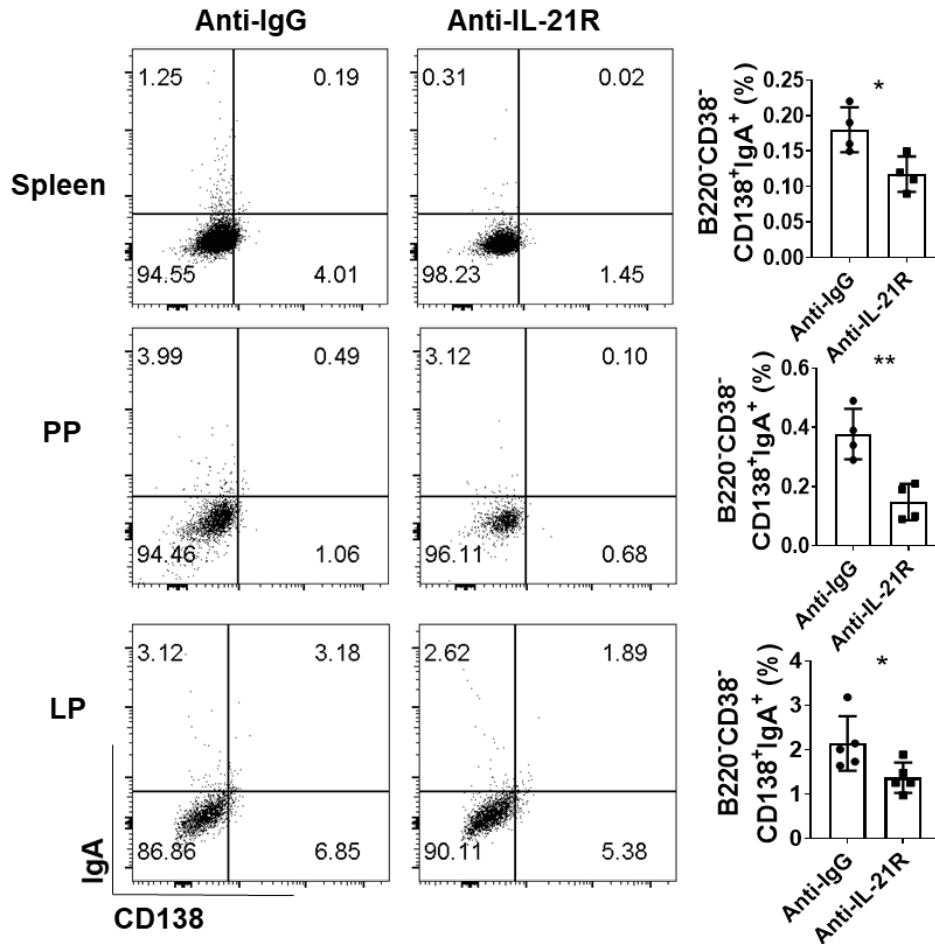


Supplementary Figure 2. IgA plasma B cells development is impaired in IL-21R^{-/-} mice while is intact in IL-17R^{-/-} mice. WT, IL-17R^{-/-}, IL-21R^{-/-} mice (n = 5/group) were orally infected with *Citrobacter rodentium* (2 × 10⁶ CFU/mouse) on day 0, and re-infected with the same amount of *C. rodentium* on day 35 after initial infection. One week after the *C. rodentium* re-infection, mice were sacrificed, and the B220⁺CD38⁻CD138⁺IgA⁺ B cells in SP, PP, and LP from WT and IL-17R^{-/-} mice (A) or IL-21R^{-/-} mice (D) were analyzed by FACS. (B-C) Sera were collected from WT and IL-17R^{-/-} mice when sacrificed, and *C. rodentium*-specific IgA and IL-21 levels in sera were measured by ELISA. One representative of 2-3 experiments with similar results was shown. **p* < 0.05. Unpaired Student's t test.



Supplementary Figure 3. IL-21R^{-/-}, but not IL-17^{-/-}, mice showed impaired memory and plasma IgA cells under steady condition. GL-7⁺ CD95⁺ B cells in PP (A), B220⁺ CD138⁻CD38⁺IgA⁺B cells (B), and B220⁻CD38⁻CD138⁺ IgA⁺ B cells (C) in PP and LP from WT, IL-17R^{-/-}, and IL-21R^{-/-} mice were analyzed by FACS. One representative of 2-3 experiments with similar results was shown. **p* < 0.05. One-way ANOVA.

Gated on B220⁻CD38⁻



Supplementary Figure 4. Anti-IL-21R antibody suppressed plasma IgA cells. WT mice were orally infected with *Citrobacter rodentium* (2×10^6 CFU/mouse) on day 0, and re-infected with the same amount of *C. rodentium* on day 35 after initial infection. One group of mice (n = 5) were administrated with anti-IL-21R antibody (25mg/kg) i.p every the other day from day 35, and another group of mice (n = 5) were given anti-IgG antibody as control. Mice were sacrificed one week post re-infection, and B220⁺CD38⁻CD138⁺IgA⁺ B cells in SP, PP, and LPL were analyzed by FACS. One representative of two experiments with similar results. *p < 0.05, **p < 0.01. Unpaired Student's t test.