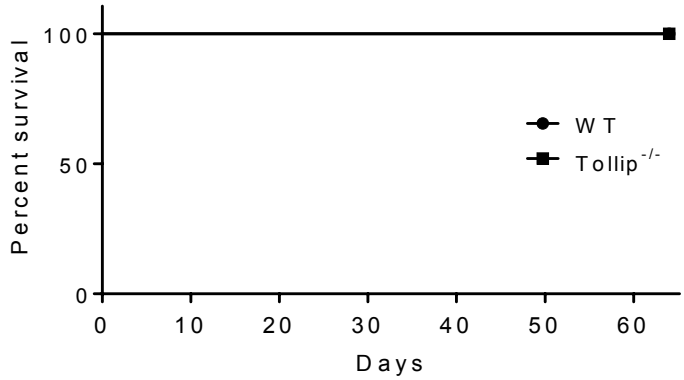
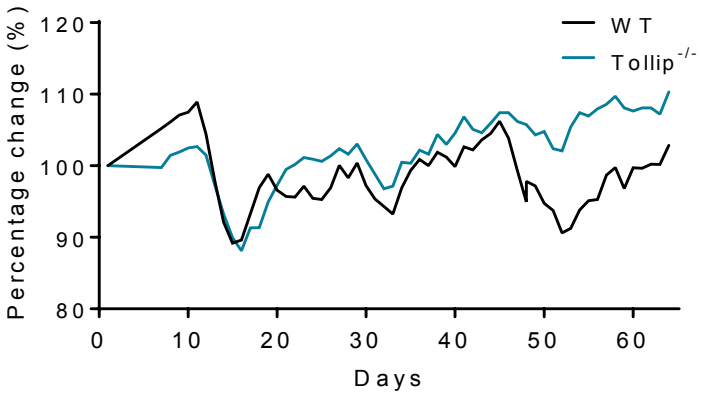
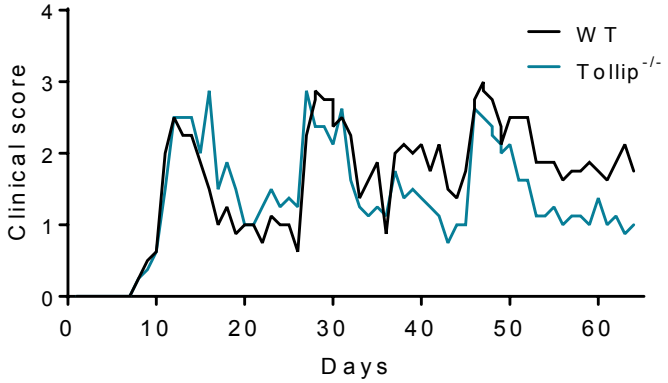
Supplementary Materials



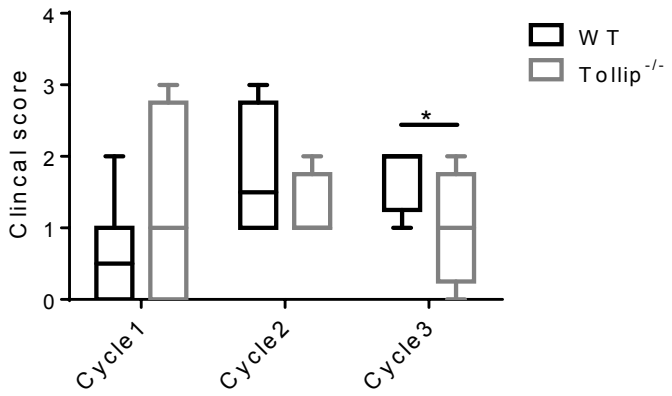
Supplementary Figure 1. Survival curve. Representative survival curve of WT and Tollip$^{-/-}$ mice treated with AOM-DSS treatment. N=5 each group.



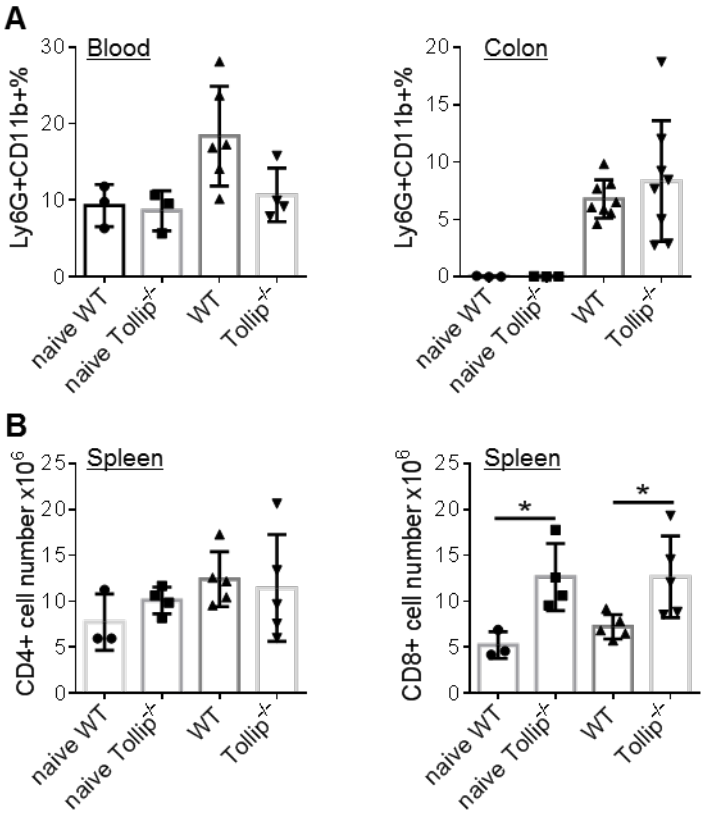
Supplementary Figure 2. Body weight change. Body weight change curves of WT and Tollip$^{-/-}$ mice during AOM-DSS treatment. N=5 each group, and values were expressed as means.



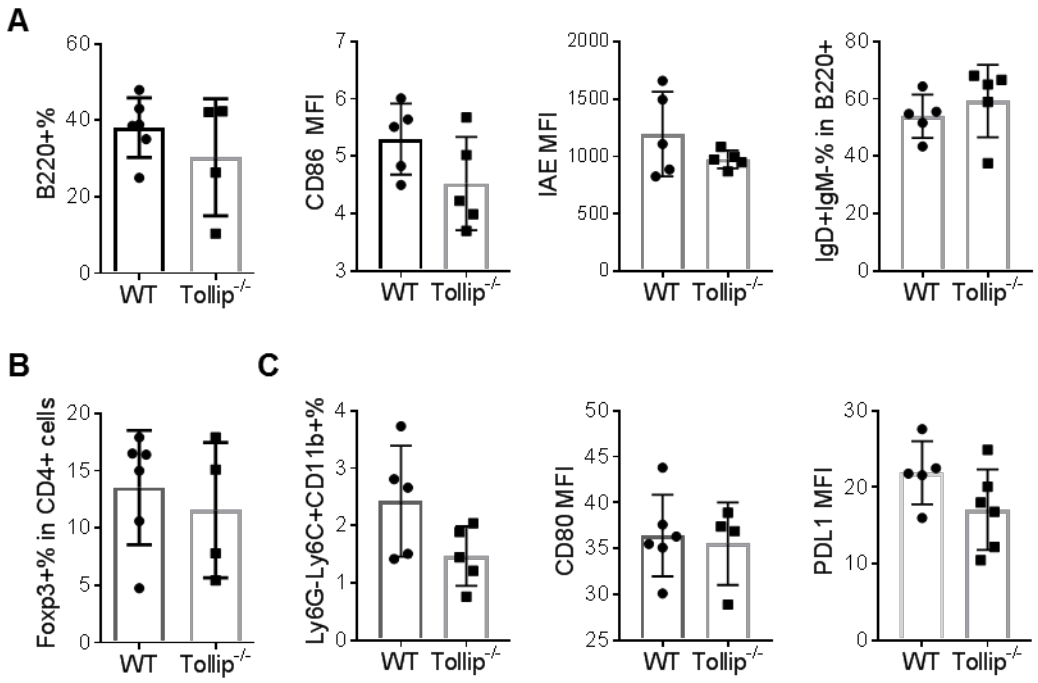
Supplementary Figure 3. Stool clinical score evaluations. Stool clinical scores including stool consistency and bleeding of WT and Tollip$^{-/-}$ mice. N=8, values were expressed as means.



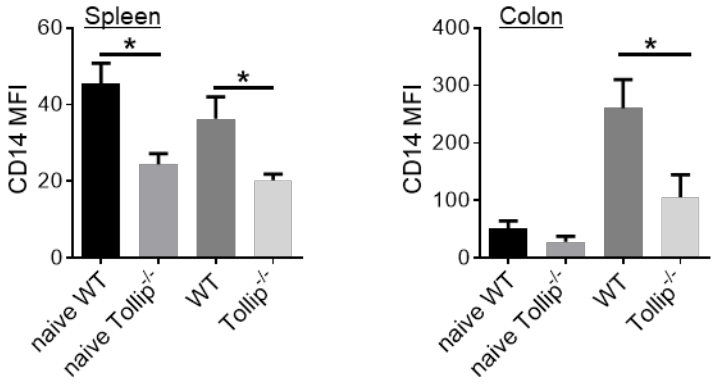
Supplementary Figure 4. Comparison of stool clinical scores. Stool clinical scores including stool consistency and bleeding of WT and Tollip$^{-/-}$ mice were collected and compared at the end of each cycle (rest day 14). N=8, values were expressed as means± SD. * $p<0.05$.



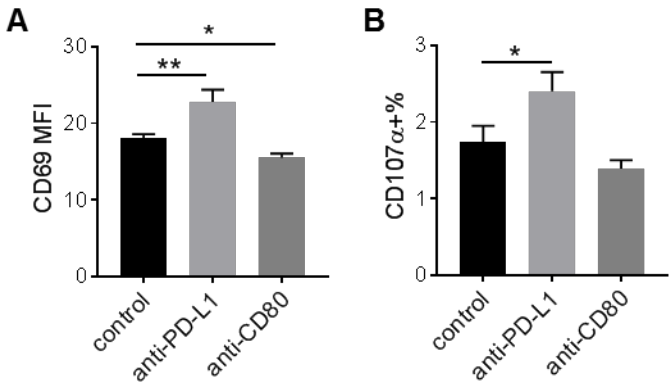
Supplementary Figure 5. Elevated T cell population was observed in Tollip deficiency mice. (**A**) Neutrophil (Ly6G+CD11b+) percentages in the blood and colon from naïve WT and Tollip-/- mice, or AOM-DSS treated WT and Tollip$^{-/-}$ mice. (**B**) CD4+ and CD8+ cell counts in the spleens from WT or Tollip$^{-/-}$ mice with AOM-DSS treatment or naïve mice. * $p<0.05$.



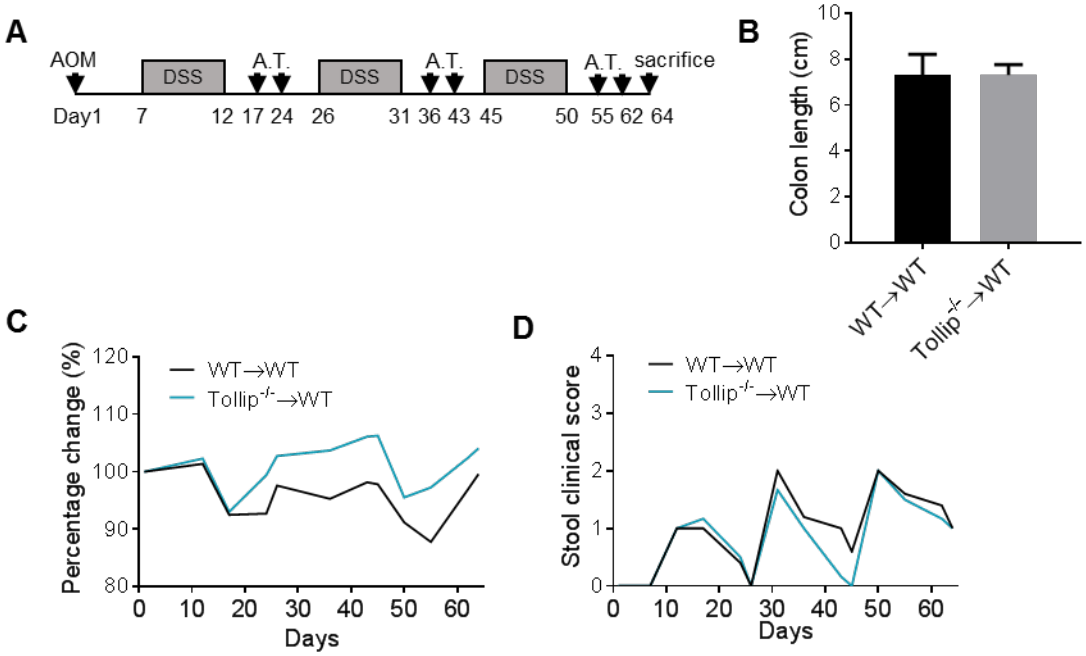
Supplementary Figure 6. Examination of immune cells in mice treated with AOM-DSS. Percentages and surface molecules of B cells (**A**), T cells (**B**), and monocytes (**C**) in the spleen from AOM-DSS treated WT and Tollip$^{-/-}$ mice.



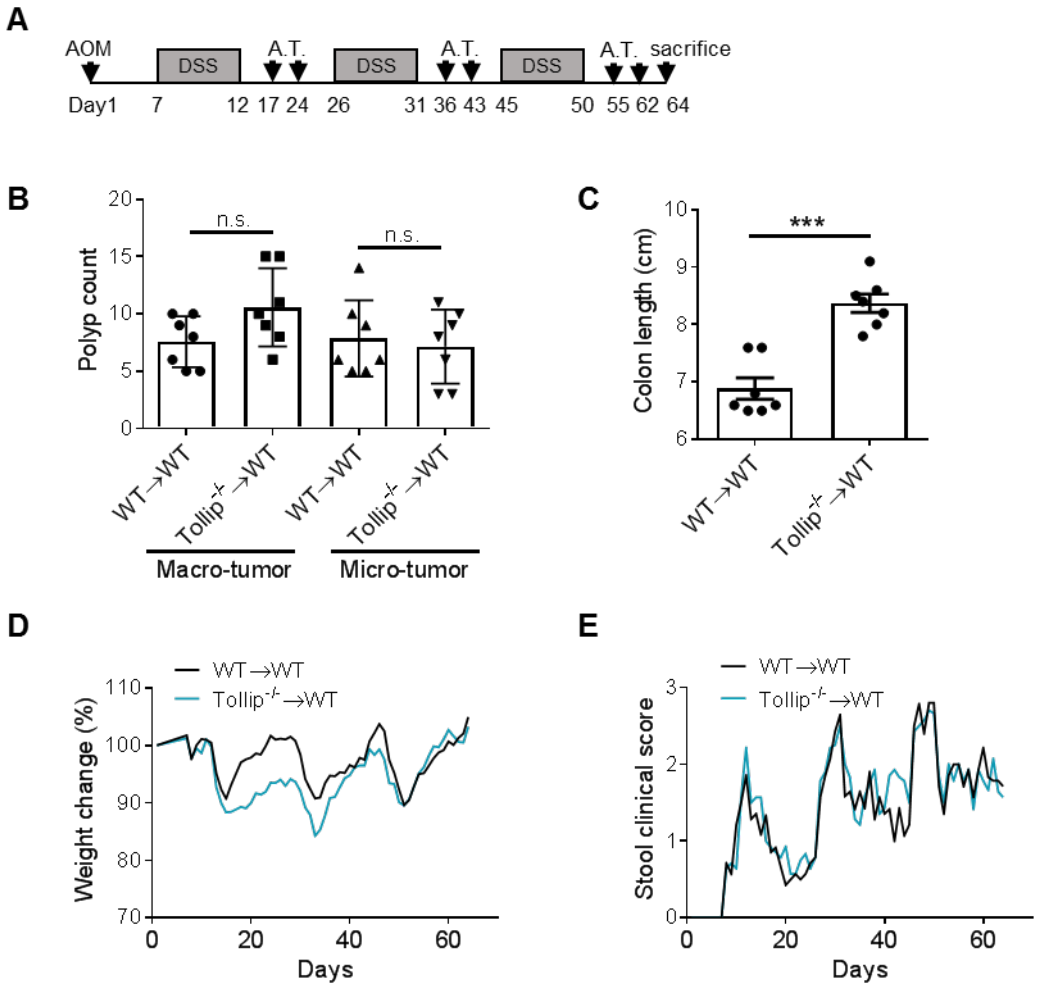
Supplementary Figure 7. Reduced CD14 expression on Tollip deficient neutrophils. CD14 expression on neutrophils from spleen or colon in naïve WT and Tollip$^{-/-}$ mice, or AOM-DSS treated WT and Tollip$^{-/-}$ mice was examined by flow cytometry. * $p<0.05$.



Supplementary Figure 8. The modulation of T cell activation by neutrophils through PD-L1/CD80. In the presence of anti-PD-L1 or anti-CD80 antibodies, splenocytes were co-cultured with GM-CSF primed neutrophils in the anti-CD3 antibody coated plates for 24 hours, then CD69 levels on CD4+ T cells were measured by flow cytometry (**A**). CD107a positive cells were analyzed in CD8+ cells (**B**). * $p<0.05$; ** $p<0.01$.



Supplementary Figure 9. (**A**) Schematic protocol of AOM-DSS treatment with adoptive transfer (A.T.) of WT or Tollip$^{-/-}$ neutrophils to WT mice. (**B**) Colon length at the end of AOM-DSS regimen from the mice which received WT or Tollip$^{-/-}$ neutrophils. (**C**) Body weight change curves of the recipient mice which received WT or Tollip$^{-/-}$ neutrophils during AOM-DSS treatment. (**D**) Stool clinical scores including stool consistency and bleeding of the mice which received WT or Tollip$^{-/-}$ neutrophils.



Supplementary Figure 10. Adoptive transfer of Tollip$^{-/-}$ monocytes to WT mice. (**A**) Schematic protocol of AOM-DSS treatment with adoptive transfer (A.T.) of WT or Tollip$^{-/-}$ monocytes to WT mice. (**B**) Tumor burden in WT mice which received WT or Tollip-/- monocytes. (**C**) Colon length at the end of AOM-DSS regimen from mice which received WT or Tollip$^{-/-}$ monocytes. (**D**) Body weight change curves of the mice which received WT or Tollip$^{-/-}$ monocytes during AOM-DSS treatment. (**E**) Stool clinical scores including stool consistency and bleeding of the mice which received WT or Tollip$^{-/-}$ monocytes. *** $p<0.01$.