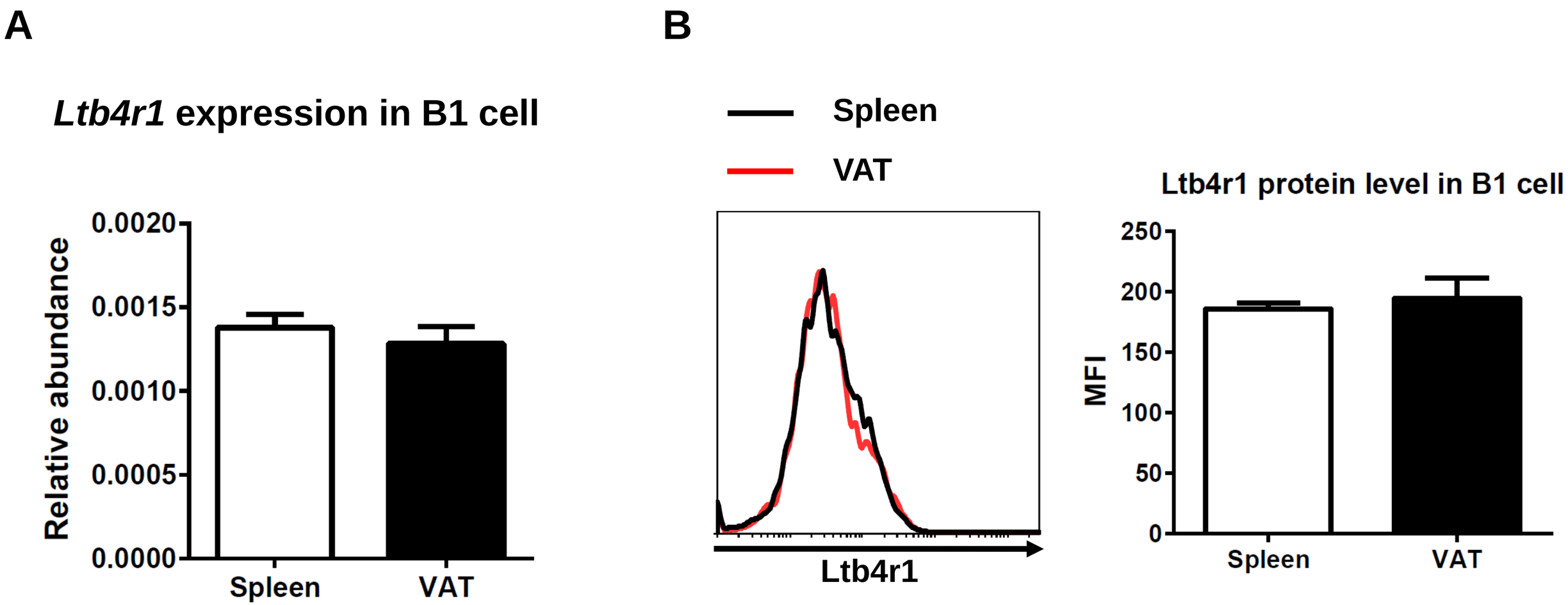
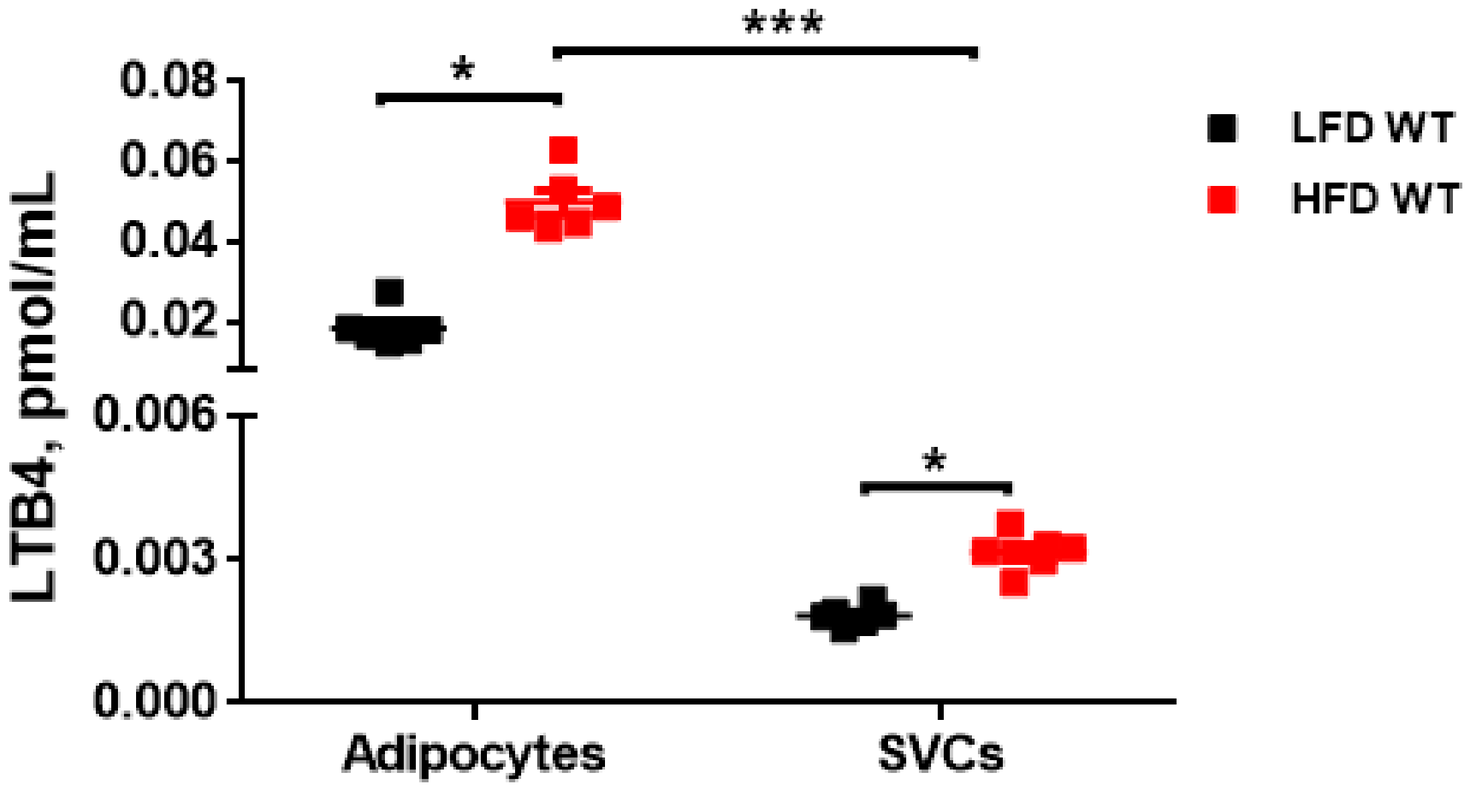
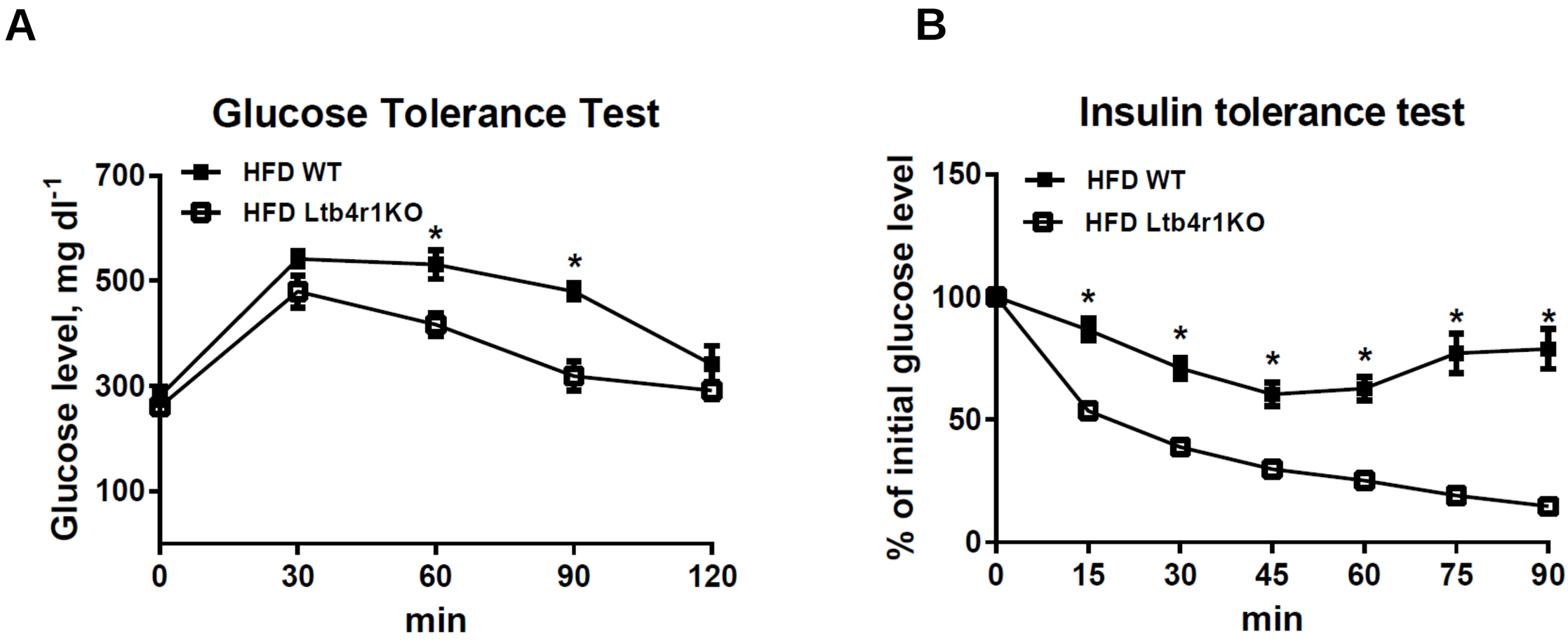


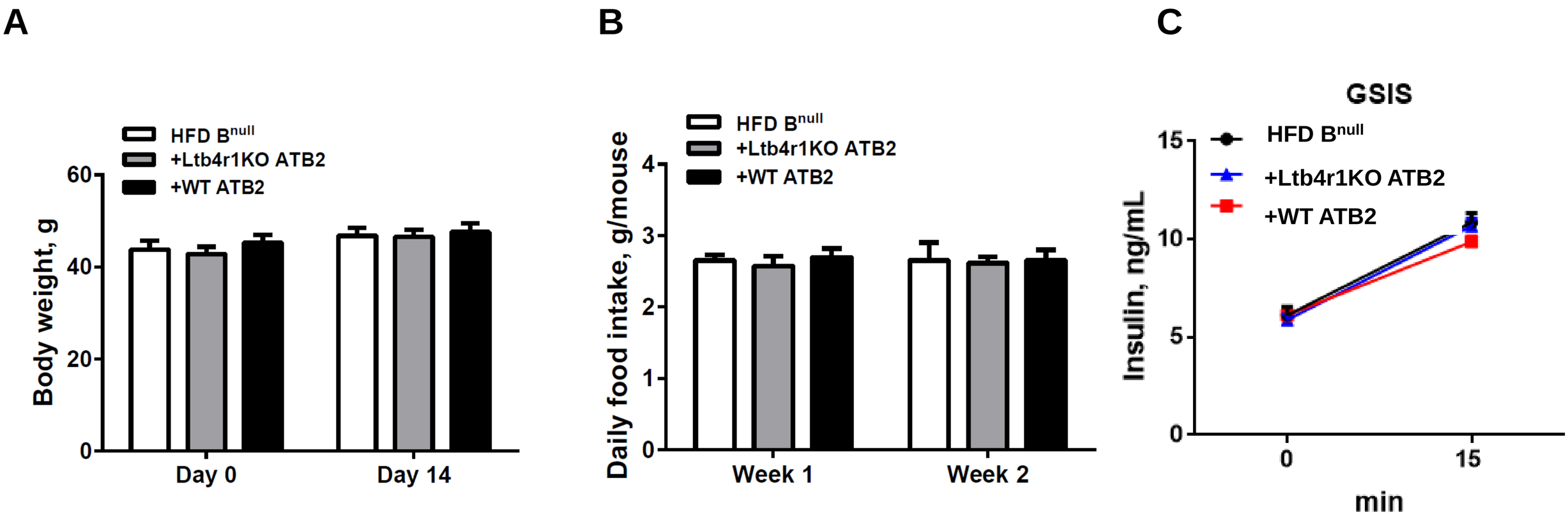
Supplementary Figure 1. Ltb4r1 expression pattern in tissue B1 ($Cd19^{+}Cd5^{+}$) cells. The gene expression of *Ltb4r1* (**A**) and its protein level on the cell surface (**B**) of spleen and VAT B1 cells. Data are presented as mean ± SEM. n=6 per group. All panels were analyzed by Student's *t* test. VAT, visceral adipose tissue.



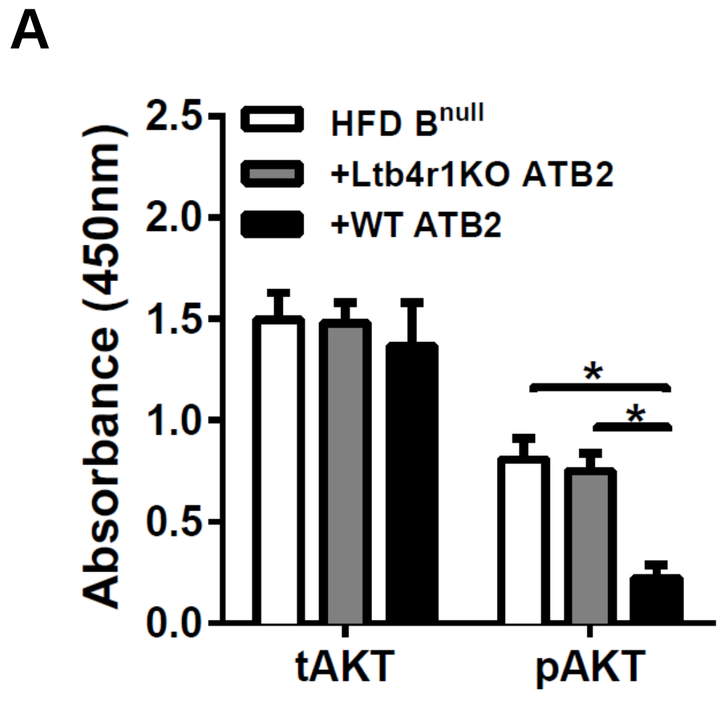
Supplementary Figure 2. LTB4 secretion by adipocytes and SVCs of LFD and HFD-fed WT mice. Mature adipocytes and SVCs were isolated from VAT of LFD and HFD WT mice and then cultured in 12-well plates (0.5 x 10^6/well). After 24 hours, LTB4 concentrations in culture medium was measured by ELISA kit. Data are presented as mean ± SEM. n=6 per group. *P<0.05 by one-way ANOVA with Bonferroni's post test. SVCs, stromal vascular cells.

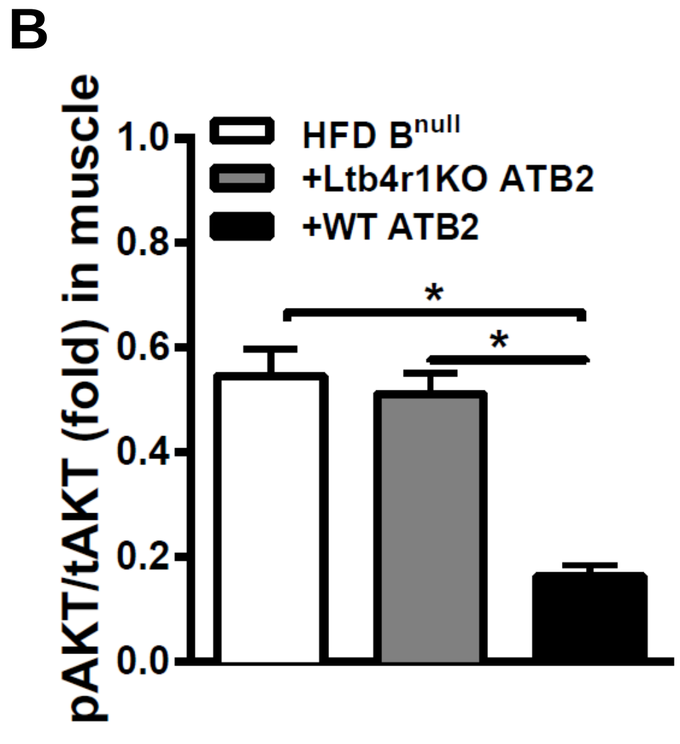


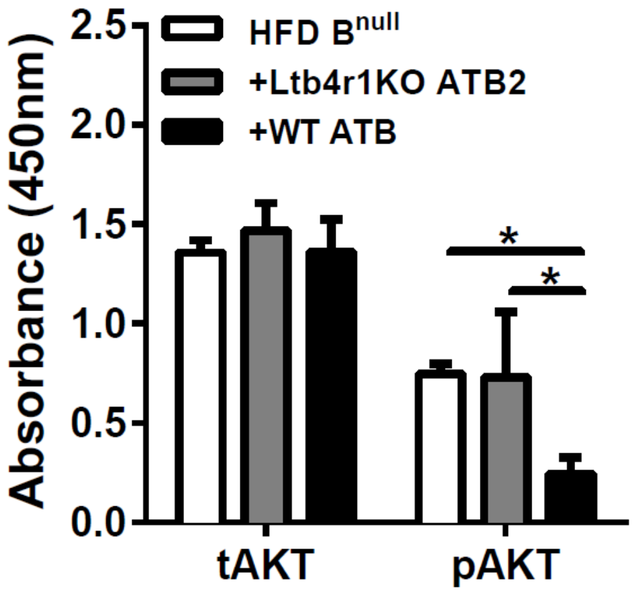
Supplementary Figure 3. (**A, B**) Glucose tolerance and insulin tolerance tests of HFD-fed Ltb4r1KO and WT mice. Please note that the GTT and ITT results for the HFD WT mice are the same as in Figure 1 and are shown here again simply for comparative purposes. Data are presented as mean ± SEM. n=6 for HFD WT group and n=8 for HFD Ltb4r1KO group. **P*<0.05, all panels were analyzed by one-way ANOVA with Bonferroni's post test.

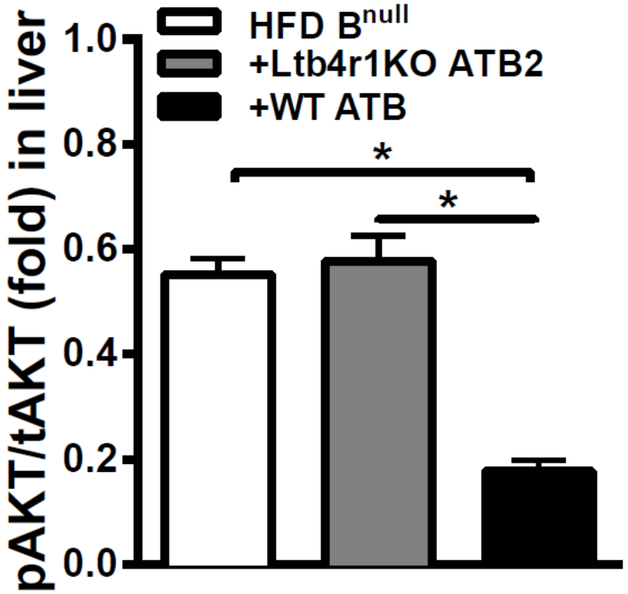


Supplementary Figure 4. (**A, B**) The body weight and daily food intake of HFD-fed B^{null} mice after adipose tissue B2 (ATB2) cell transfer. (**C**) Plasma Insulin levels of HFD-fed B^{null} mice before and 15 minutes after glucose injection (1mg g^{-1} body weight). Data are presented as mean ± SEM. n=6 per group. All panels were analyzed by one-way ANOVA with Bonferroni's post test. GSIS, glucose-stimulated insulin secretion.

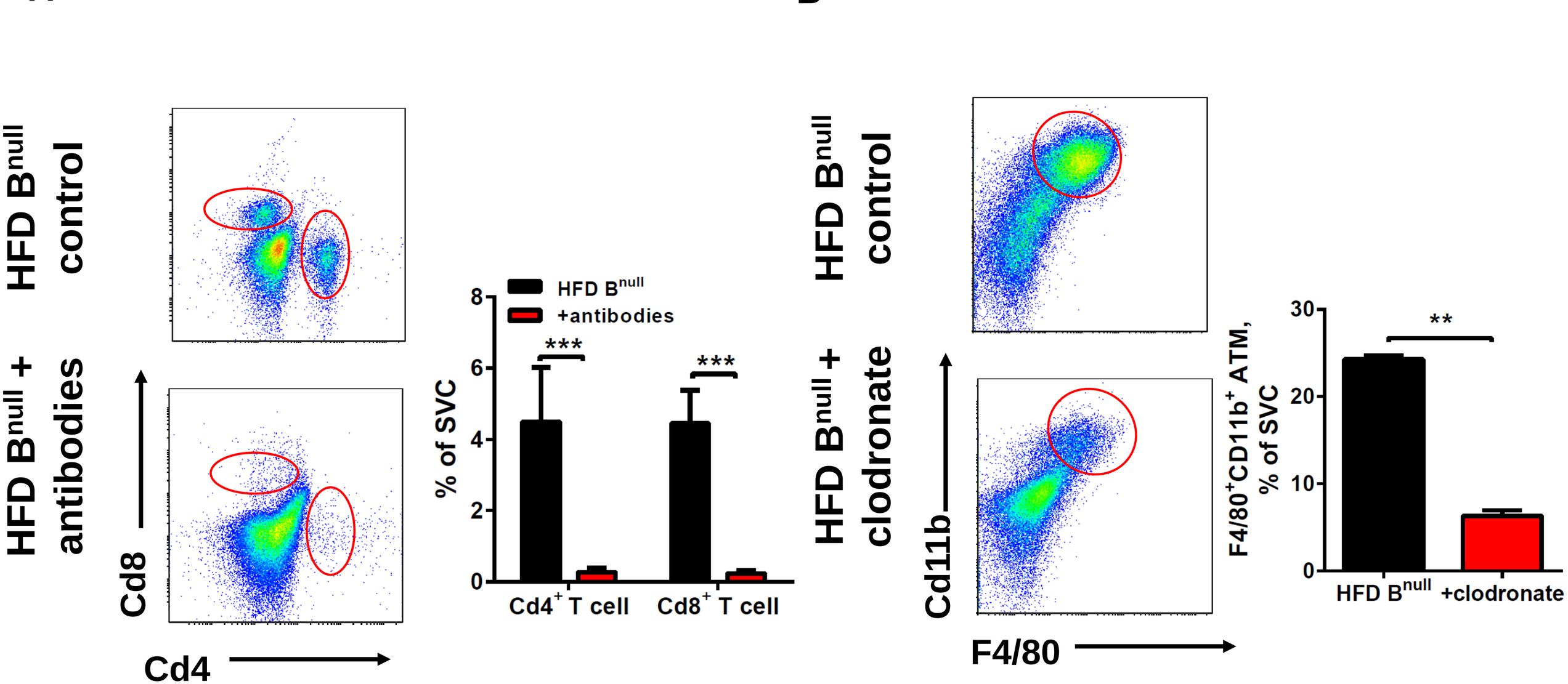




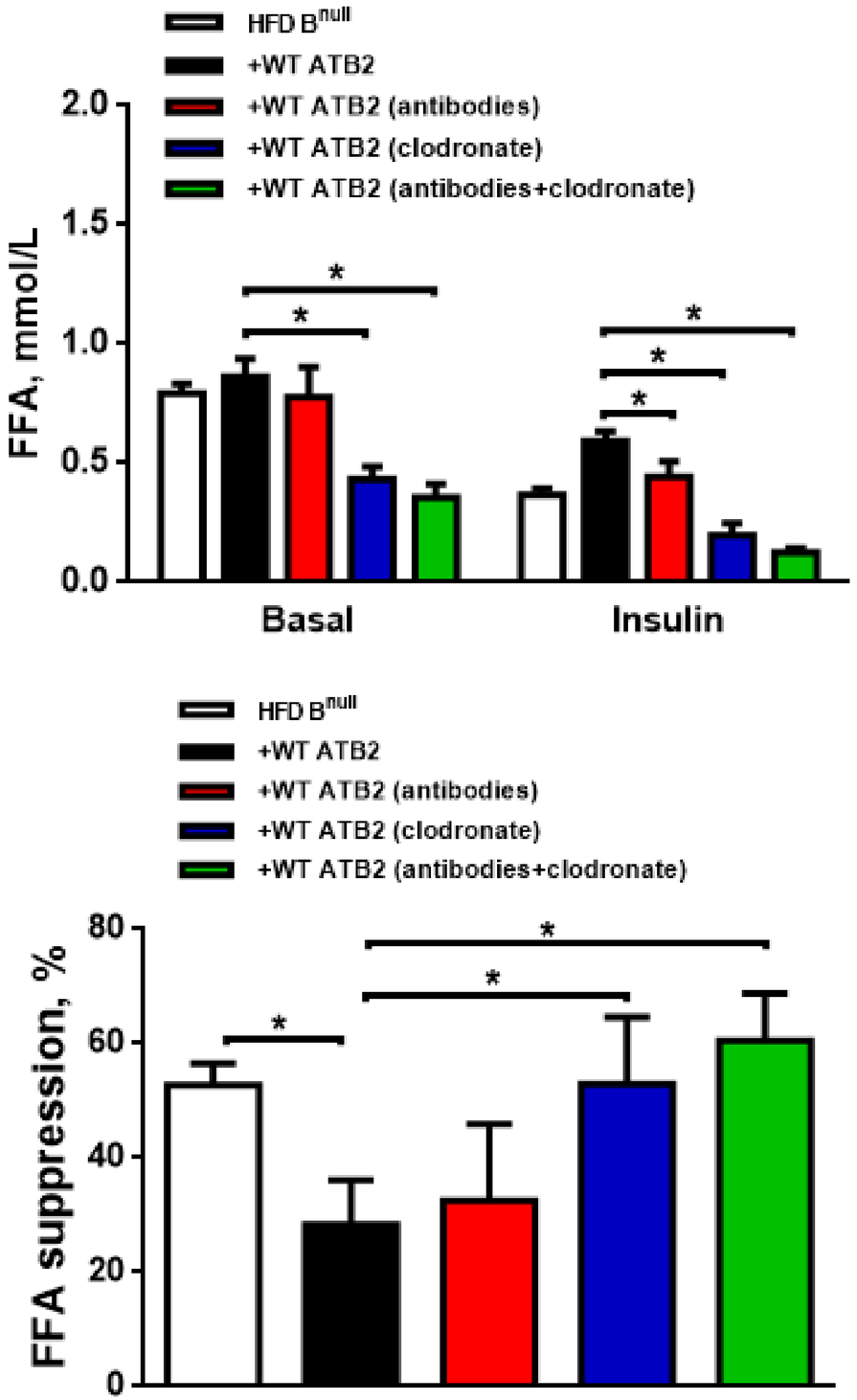


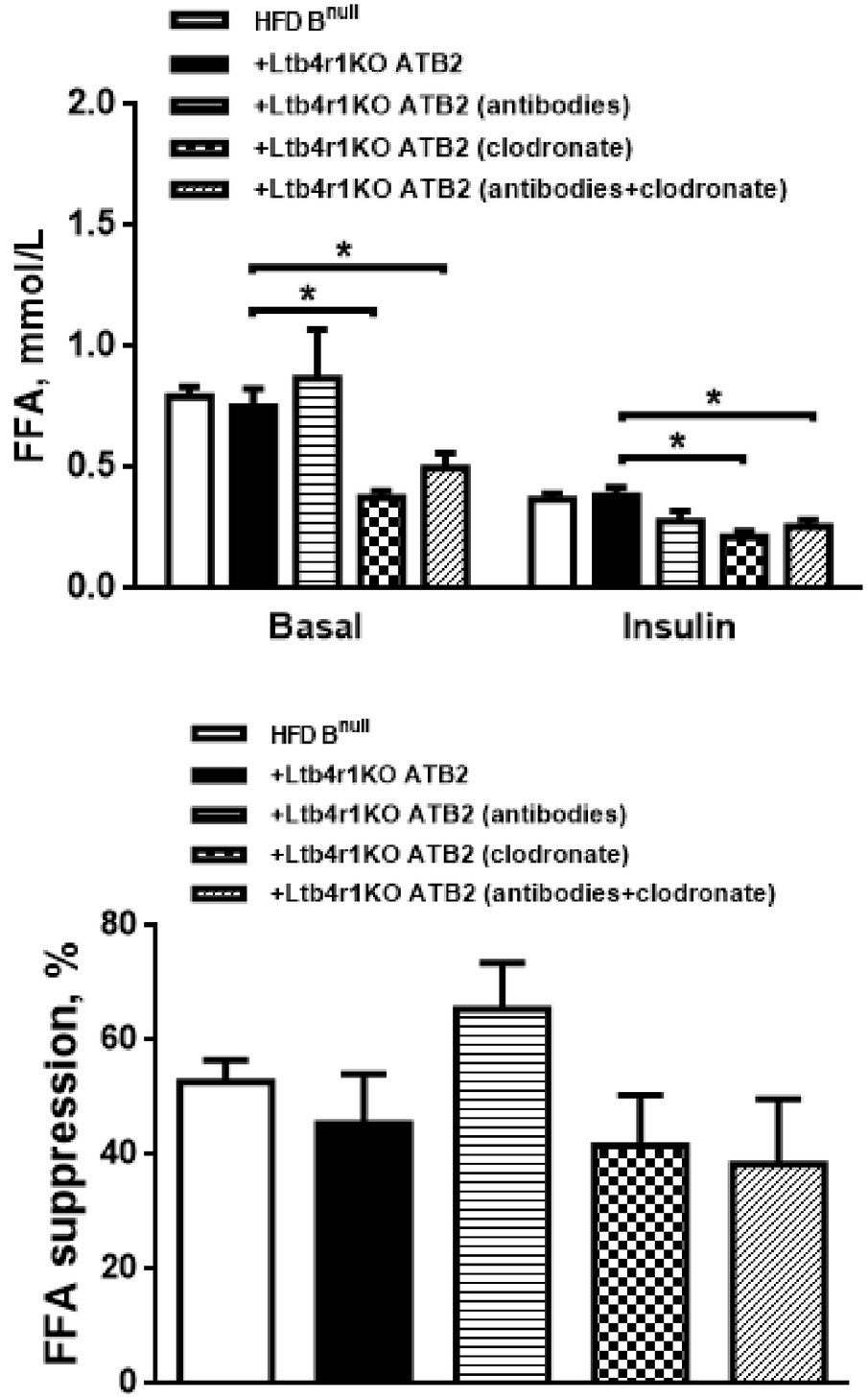


Supplementary Figure 5. After ATB2 cell transfer, phosphorylation of Akt was measured in skeletal muscle (**A, B**) and liver (**C, D**) of HFD B^{null}. Data are presented as mean ± SEM. n=5 per group. *P<0.05, all panels were analyzed by one-way ANOVA with Bonferroni's post test.

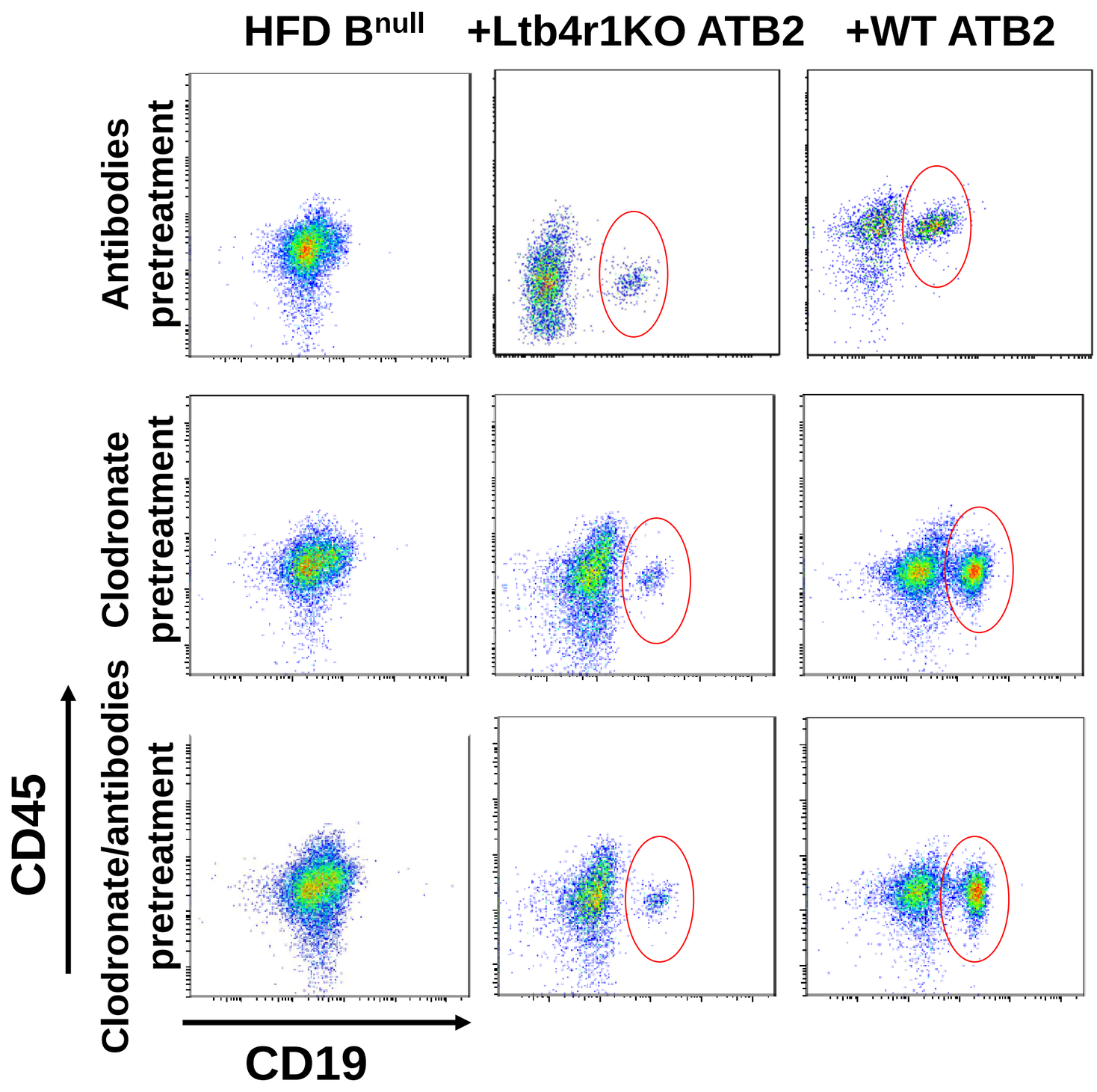


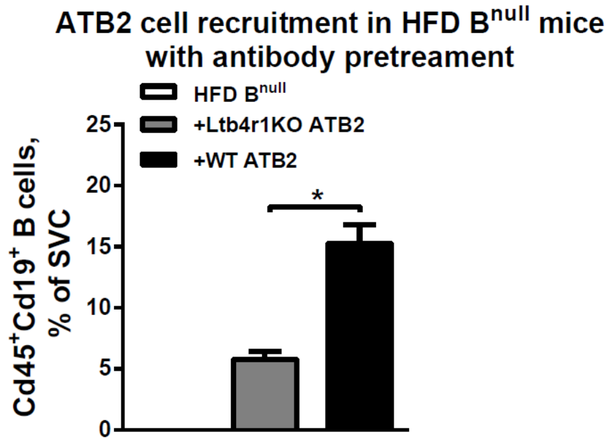
Supplementary Figure 6. The population of T cells (**A**) or macrophages (**B**) in VAT of HFD B^{null} mice after treatment with either T cell-depleting antibodies or clodronate. Data are presented as mean ± SEM. n=6 per group. ***P*<0.01, ****P*<0.001, all panels were analyzed by Student's *t* test.

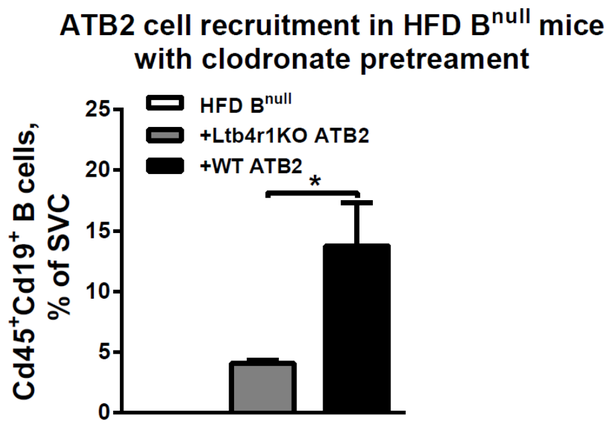


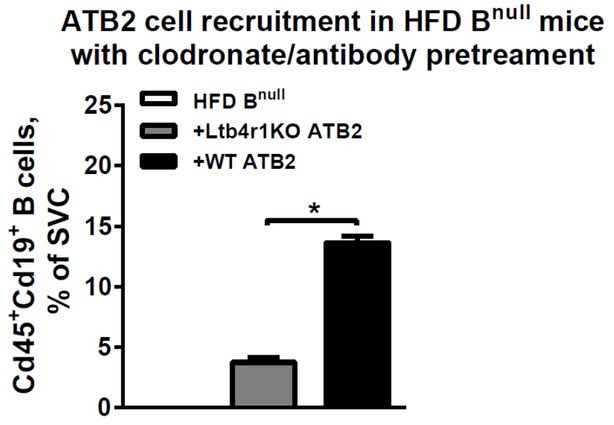


Supplementary Figure 7. After 8 hours fasting (Basal) or after 5 min insulin infusion (Insulin), plasma free fatty acid (FFA) levels were measured in HFD B^{null}/ ATB2 mice pretreated with antibodies and/or clodronate. Data are presented as mean ± SEM. n=6 per group. *P<0.05, all panels were analyzed by one-way ANOVA with Bonferroni's post test. HFD B^{null}/ ATB2, HFD B^{null} mice with ATB2 cell transfer.



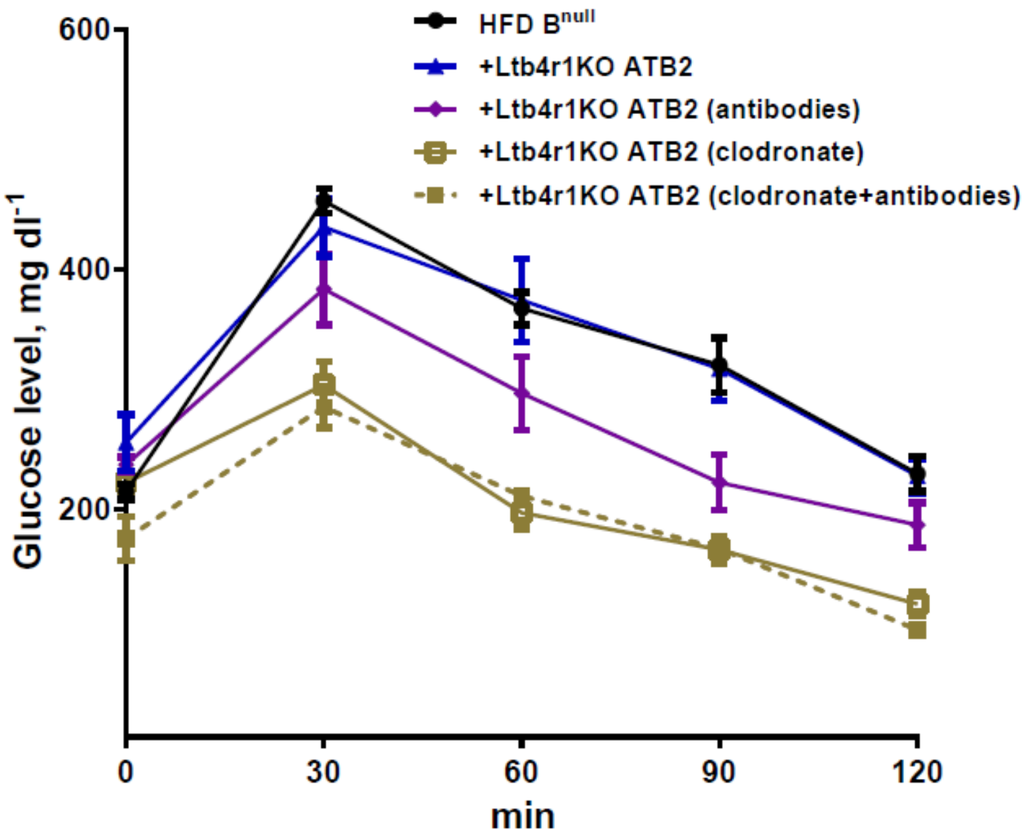




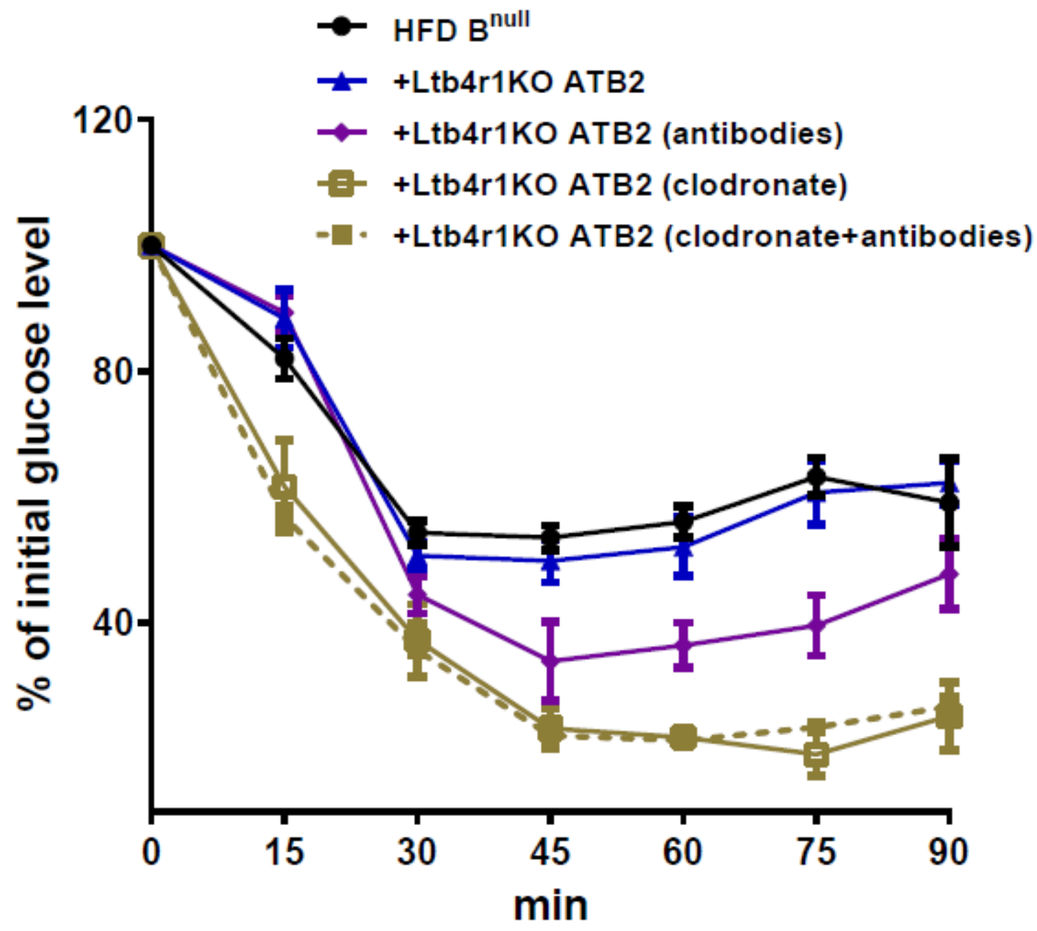


Supplementary Figure 8. Recruitment of donor B cells into VAT of HFD B^{null} recipient mice with either T cell-depleting antibodies and/or clodronate pretreatment. Data are presented as mean ± SEM. n=7 for antibodies pretreatment, and n=6 for the other groups. *P<0.05, all bar graphs were analyzed by one-way ANOVA with Bonferroni's post test.

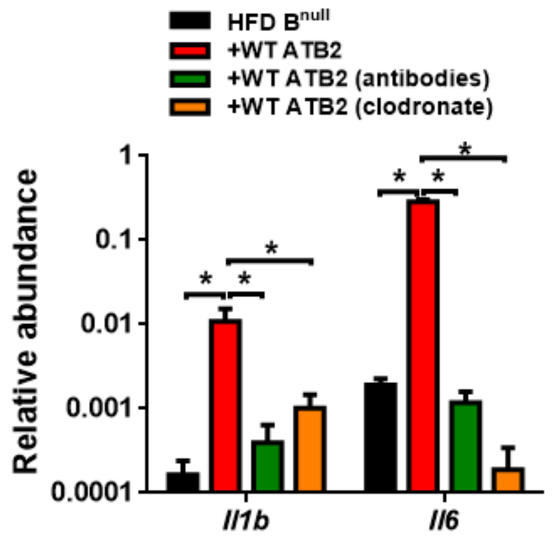
A

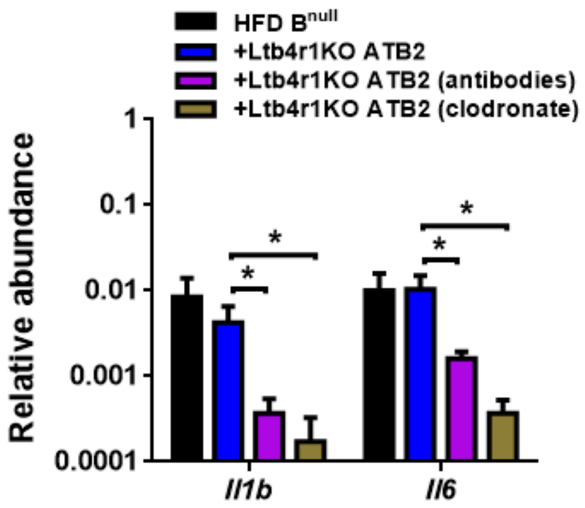


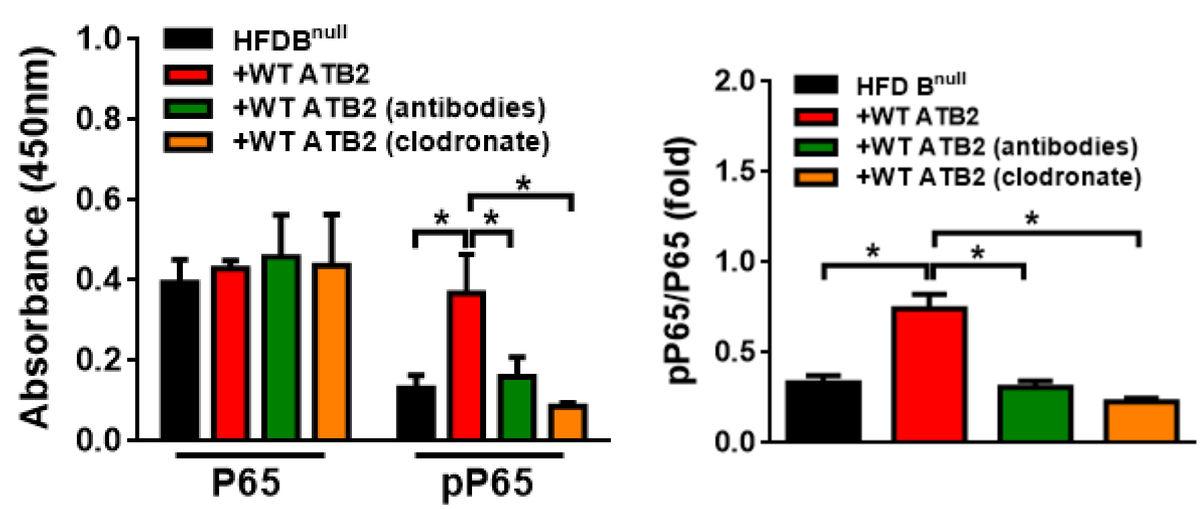
B

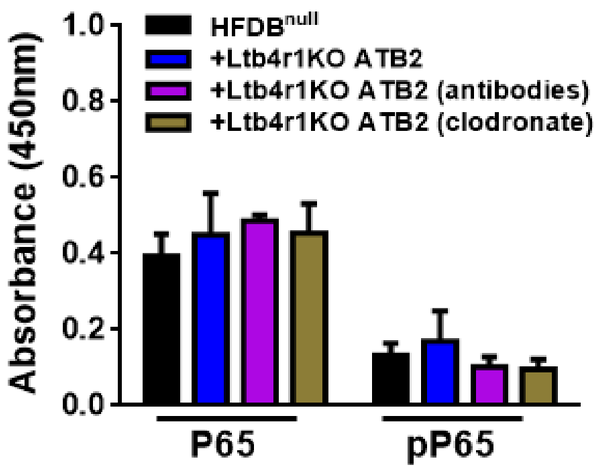


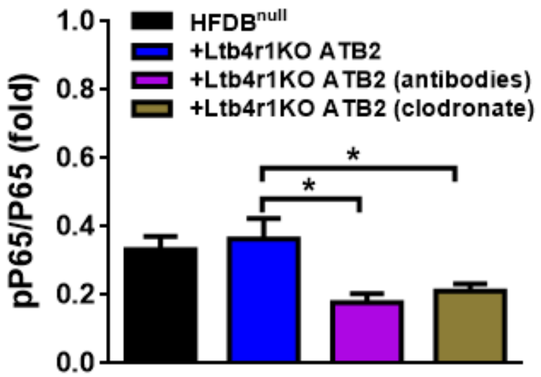
Supplementary Figure 9. Glucose tolerance (**A**) and insulin tolerance tests (**B**) in HFD B^{null}/Ltb4r1KO ATB2 mice pre-treated with clodronate or T cell-depleting antibodies. HFD B^{null}/ Ltb4r1KO ATB2, HFD B^{null} mice with Ltb4r1KO ATB2 cell transfer. Please note that the GTT and ITT results for the HFD B^{null} mice are the same as in Figure 5A and B and are shown here again simply for comparative purposes. Data are presented as mean ± SEM. n=8 per group. *P<0.05, all panels were analyzed by one-way ANOVA with Bonferroni's post test.

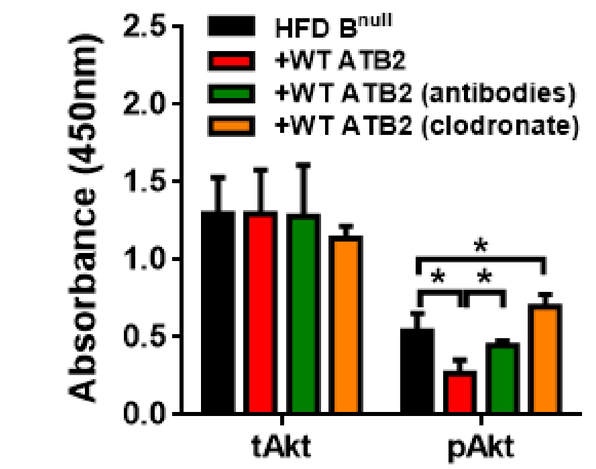


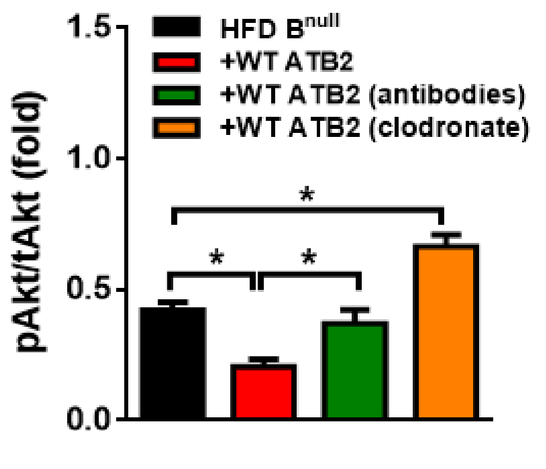


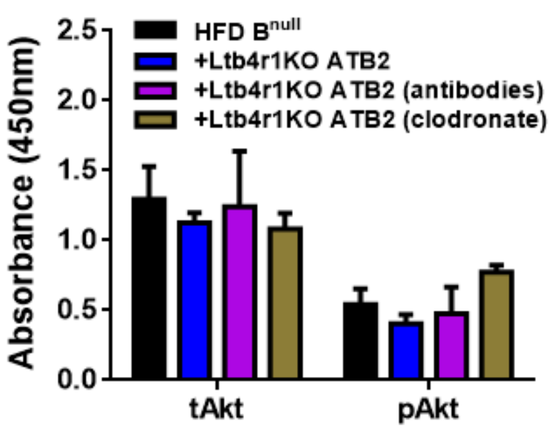


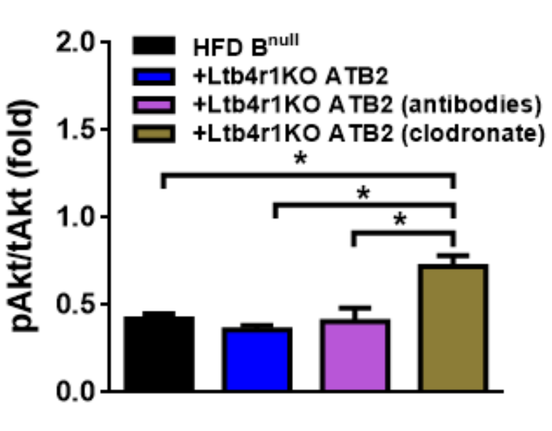




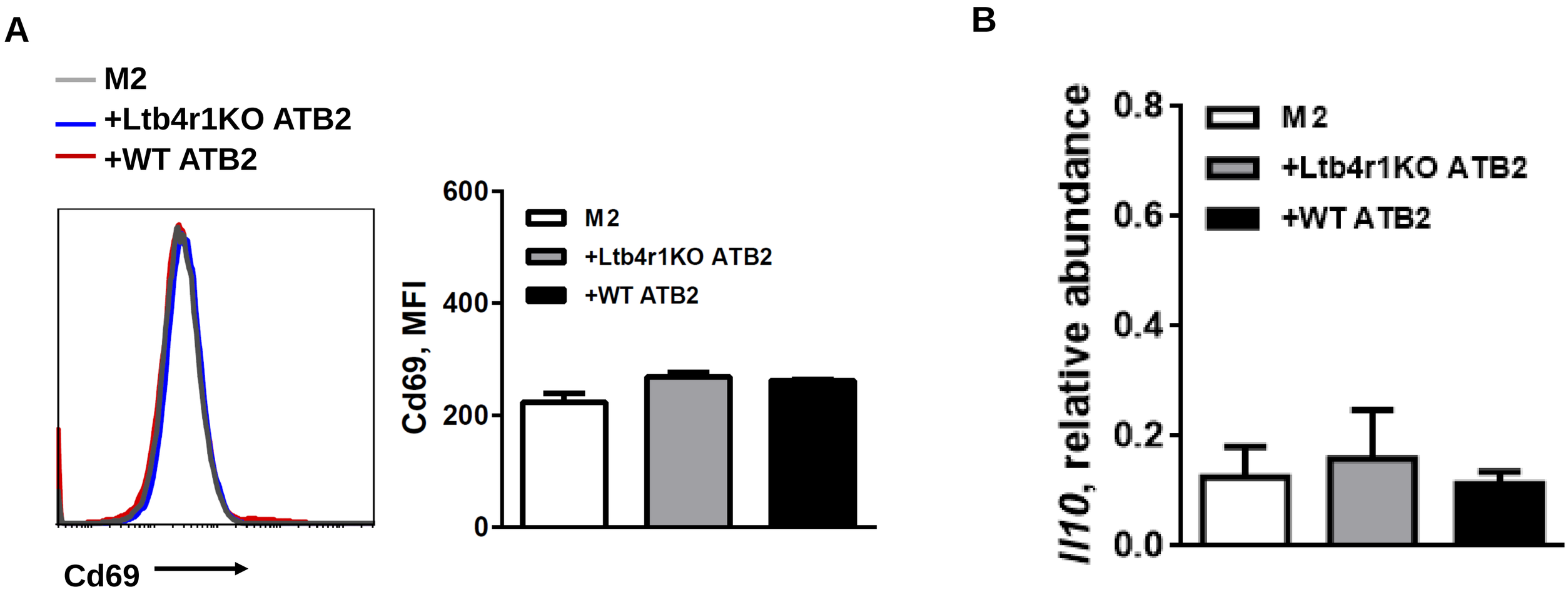




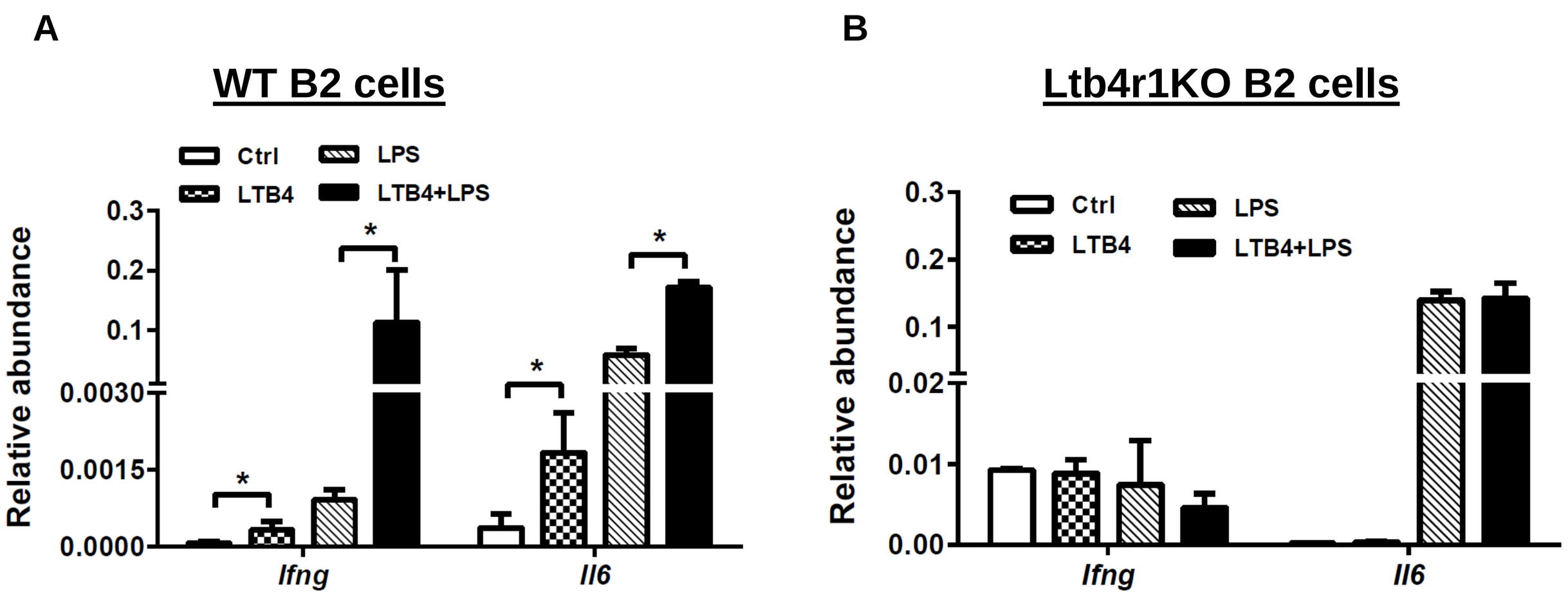




Supplementary Figure 10. After ATB2 cell transfer, proinflammatory cytokine expression (**A, B**), activation of Nfkb (**C, D**), and phosphorylation of Akt (**E, F**) in VAT of HFD B^{null} mice pre-treated with either t cell-depleting antibodies or clodronate. Data are presented as mean ± SEM. n=5 per group. *P<0.05, all panels were analyzed by one-way ANOVA with Bonferroni's post test.



Supplementary Figure 11. Levels of the activation-related cell surface marker Cd69 (**A**) and gene expression of the anti-inflammatory cytokine *Il10* (**B**) in M2-like macrophages after co-culture with WT or Ltb4r1KO ATB2. Data are presented as mean ± SEM. n=6 per group. All panels were analyzed by one-way ANOVA with Bonferroni's post test.



Supplementary Figure 12. Production of the proinflammatory cytokines *Ifng* and *Il6* during B2 cell activation in the presence of LPS or LTB4. Data are presented as mean ± SEM. n=6 per group. **P*<0.05, all panels were analyzed by one-way ANOVA with Bonferroni's post test.