

Supplementary Figures

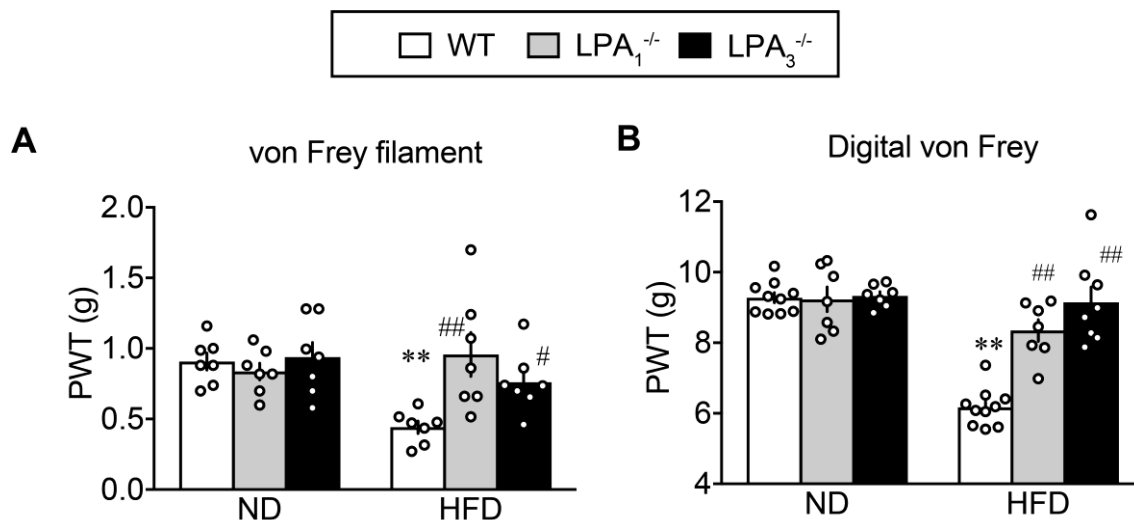


Figure 1. LPA receptor 1 and 3-mediated mechanical allodynia and hyperalgesia in HFD model (A,B) Changes in the threshold to show paw withdrawal behaviors in WT, LPA₁^{-/-} and LPA₃^{-/-} mice by von Frey filament test (A) and digital con Frey test (B). * p < 0.05, ** p < 0.01, vs. WT normal diet (ND), two-way ANOVA followed by Bonferroni’s multiple comparisons test. # p < 0.05, ## p < 0.01, vs. WT high fat diet (HFD), two-way ANOVA followed by Tukey’s multiple comparisons test (A: n = 7; B: n = 7–10).

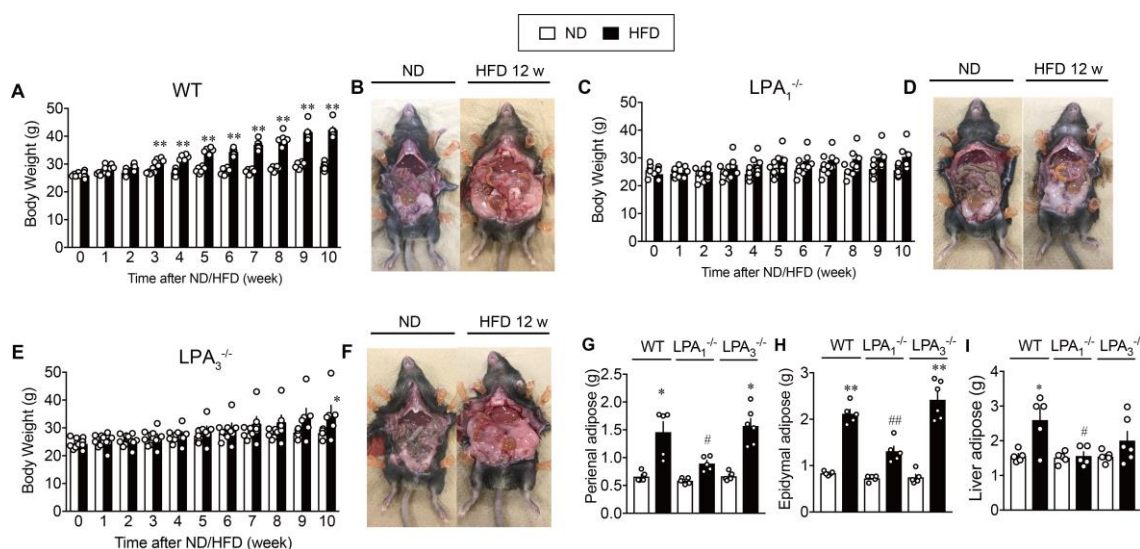


Figure 2. LPA receptor 1 and 3-specific roles in obesity-related changes in HFD model (A,C,E) Time-dependent changes in body weight of WT (A), LPA₁^{-/-} (C) and LPA₃^{-/-} (E) mice after the start of ND or HFD feeding throughout 10 weeks. (B,D,F) Representative pictures of dissected WT (B), LPA₁^{-/-} (D) and LPA₃^{-/-} (F) mice fed with ND or HFD at 12 weeks. (G–I) Changes in the weights of adipose tissues (G: perirenal, H: epididymal) and liver (I) in WT, LPA₁^{-/-} and LPA₃^{-/-} mice. (A, C, E) ** p < 0.01, vs. ND, two-way ANOVA followed by Bonferroni’s multiple comparisons test (n = 6). (D–F) ** p < 0.01, * p < 0.05, vs. ND group at each kind of mouse, ## p < 0.01, # p < 0.05, vs. WT HFD, one-way ANOVA followed by Tukey’s multiple comparisons test (n = 5–6).

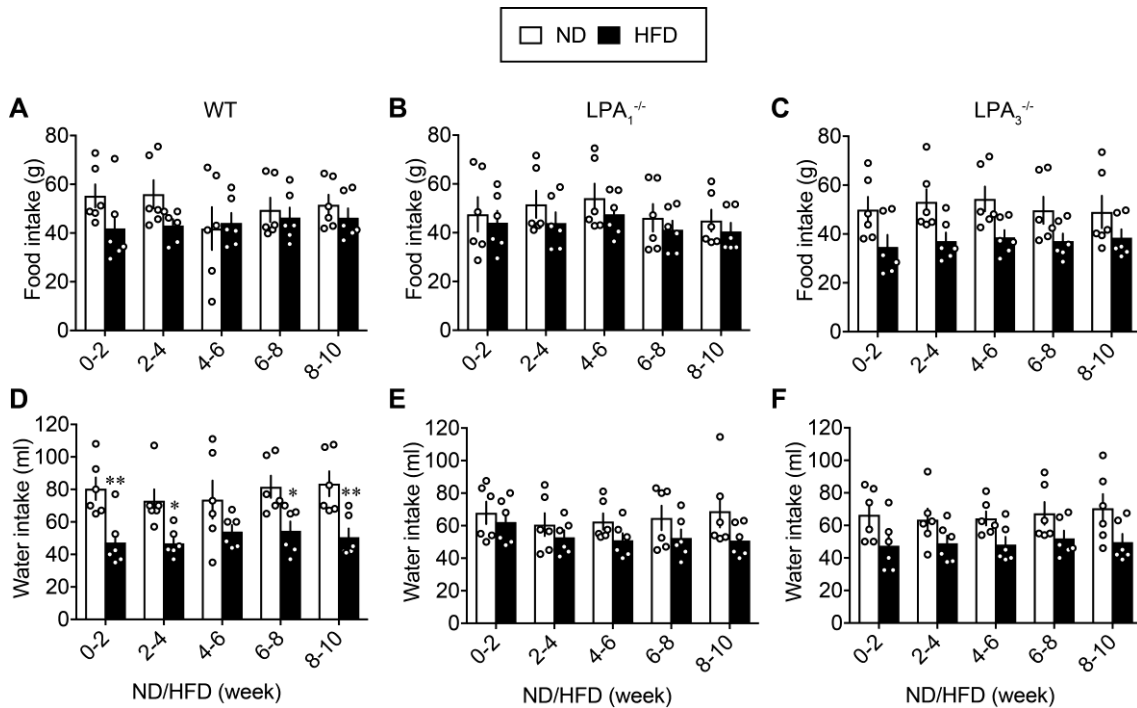


Figure 3. HFD-induced changes in food and water intake in $LPA_1^{-/-}$ and $LPA_3^{-/-}$ mice (A-F) Food intake (A-C) and water intake (D-F) during indicated periods after the start of ND or HFD feeding in WT (A, D), $LPA_1^{-/-}$ (B, E) and $LPA_3^{-/-}$ mice (C, F). * $p < 0.05$, ** $p < 0.01$, vs. Normal diet (ND), two-way ANOVA followed by Bonferroni’s multiple comparisons test (n=6).

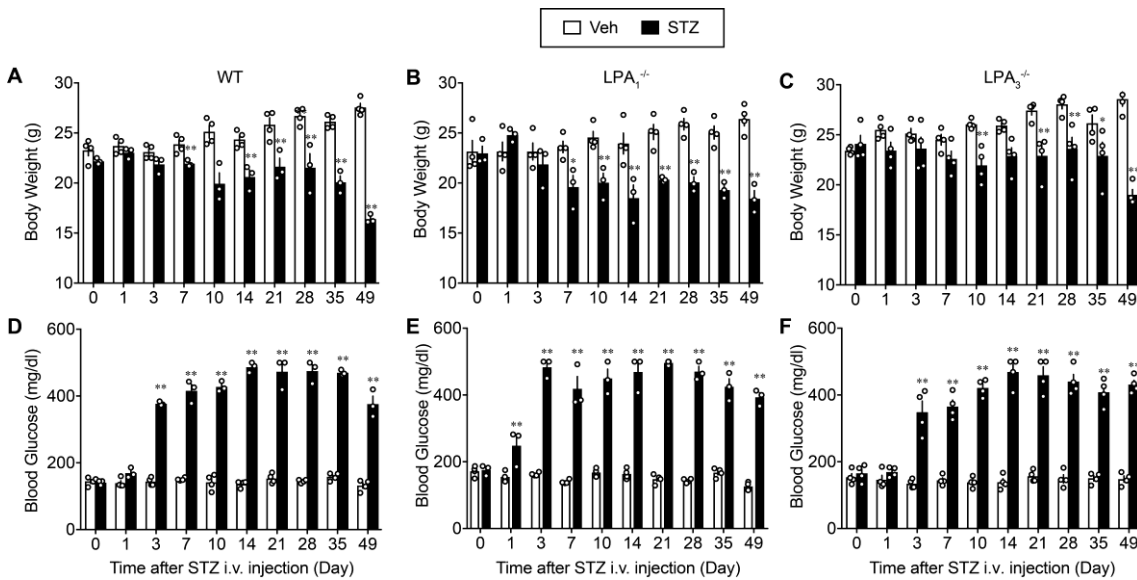


Figure 4. Lack of effects by LPA receptor 1 and 3-deficiency on STZ-induced increase in blood glucose levels and decrease in body weight (A-F) Time-dependent increase in blood glucose levels (A-C) and body weight (D-F) following the vehicle (Veh) or STZ injection (200 mg/kg, i.v.) in WT (A, D), $LPA_1^{-/-}$ (B, E) and $LPA_3^{-/-}$ (C, F) mice after Veh or STZ injection. * $p < 0.05$, ** $p < 0.01$, vs. Veh, two-way ANOVA followed by Bonferroni’s multiple comparisons test (WT Veh and $LPA_1^{-/-}$ Veh and $LPA_3^{-/-}$ Veh and STZ, n=4; WT STZ and $LPA_1^{-/-}$ STZ, n=3).