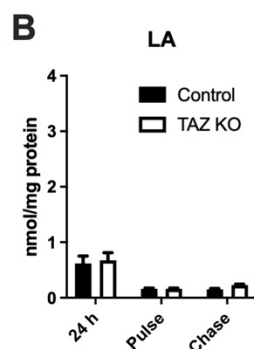
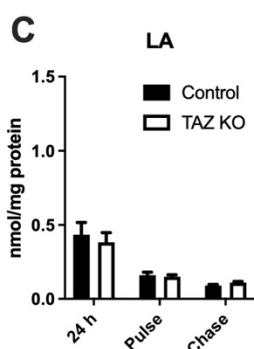
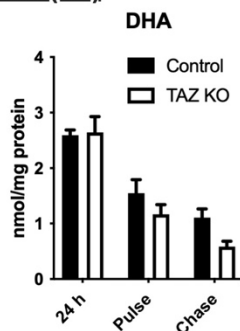
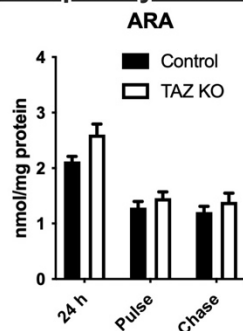


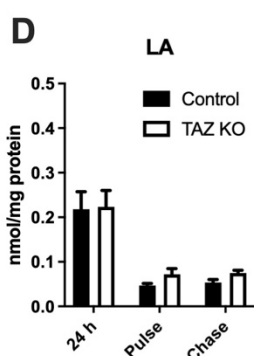
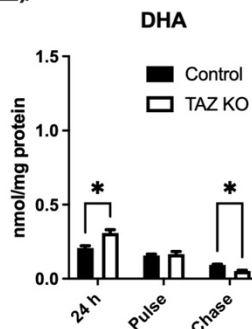
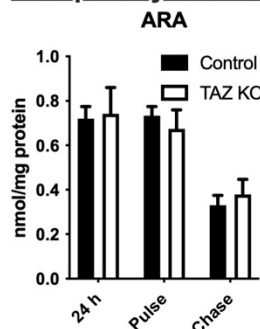
Supplemental Figure 1. Effects of TAZ KO on lipid turnover in HEK293 cells. HEK293 cells were incubated with a mix of fatty acids and 1- 14 C labeled fatty acid for 24 h, 4 h (pulse) or 4 h and then 20 h with only unlabeled fatty acid (chase). No MLCL was detected with ARA or DHA labeling. Experiments were performed in triplicate in 2-3 independent assays.



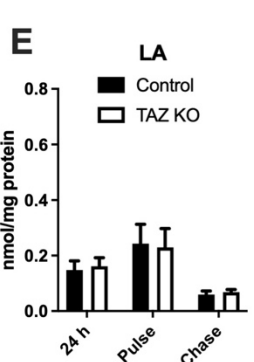
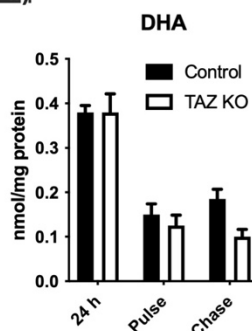
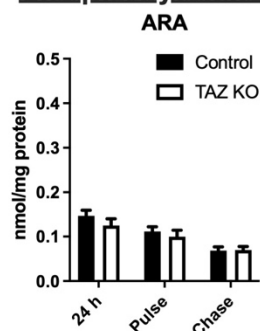
Phosphatidylethanolamine (PE)



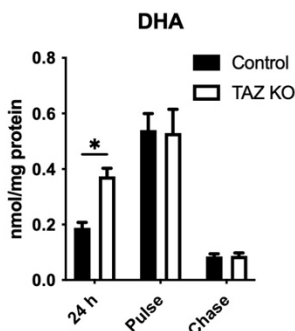
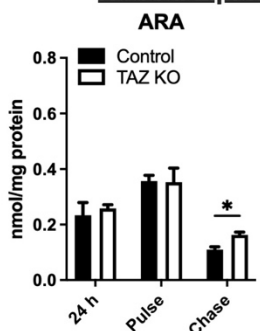
Phosphatidylinositol (PI)



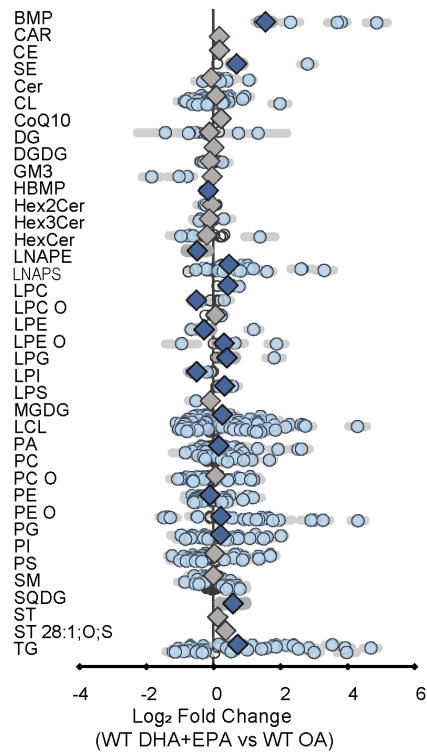
Phosphatidylserine (PS)



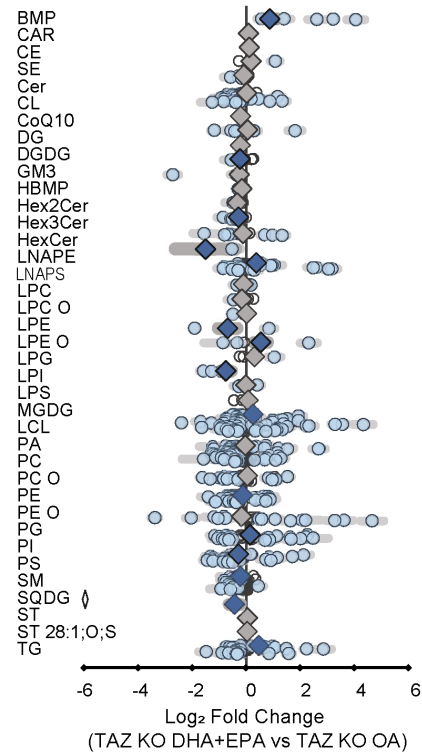
Neutral Lipids



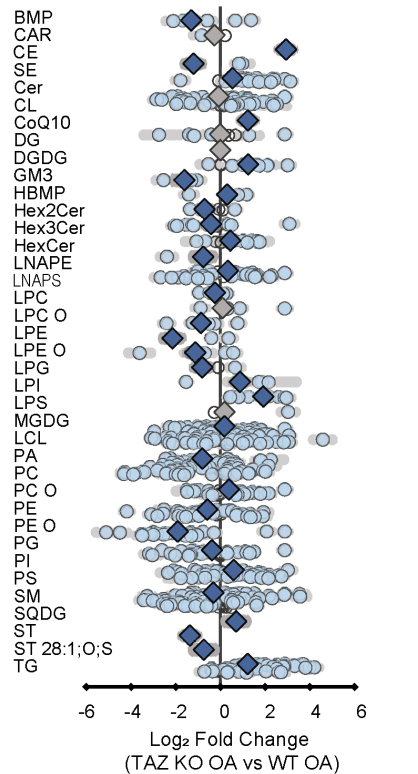
A All Lipid Classes with Treatment in WT



B All Lipid Classes with Treatment in TAZ KO

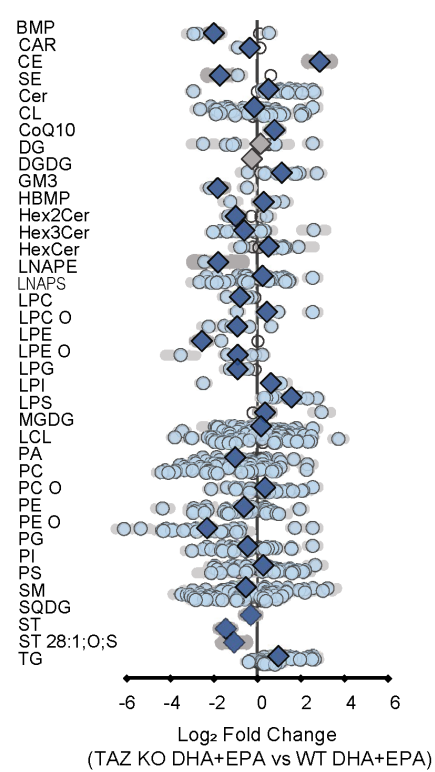


C All Lipid Classes with Genotype in OA

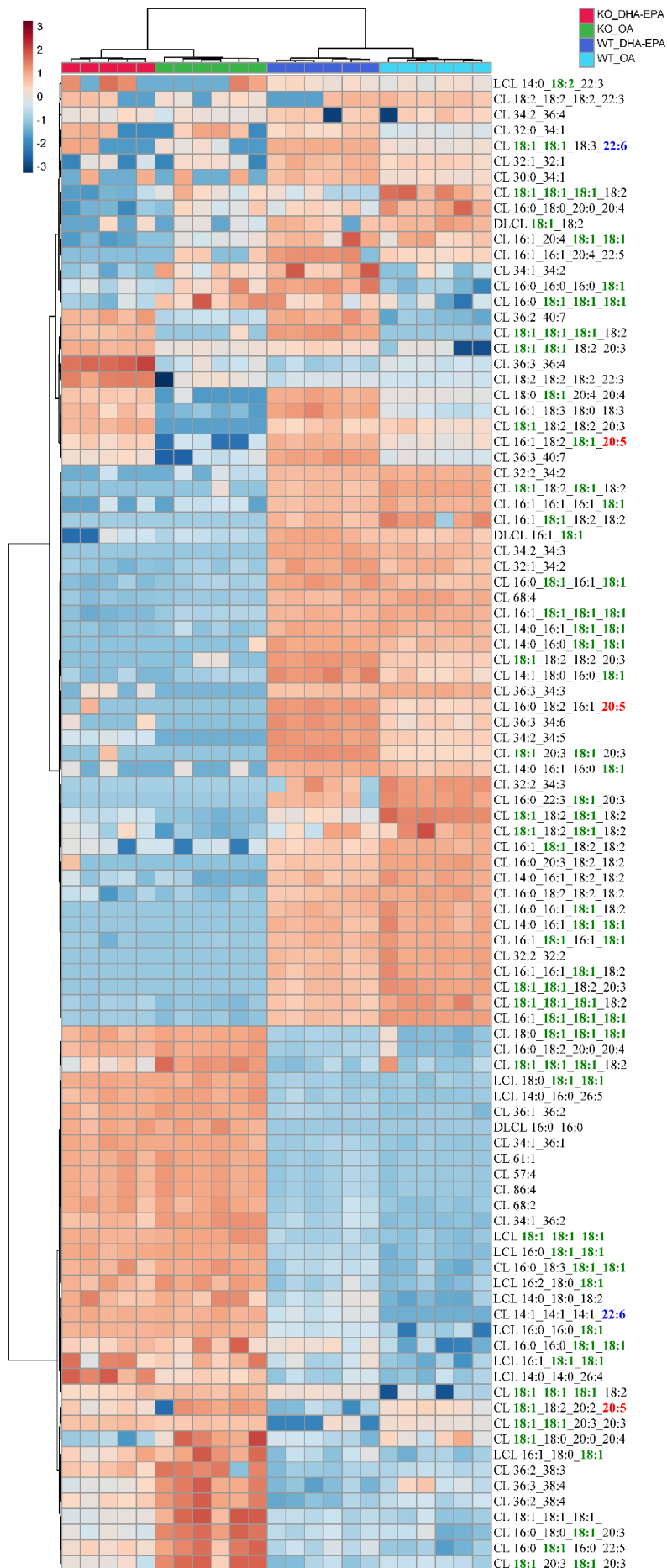


○ All Lipids BHp>0.05 ○ All Lipids BHp<0.05
◆ Class Totals BHp>0.05 ◆ Class Totals BHp<0.05

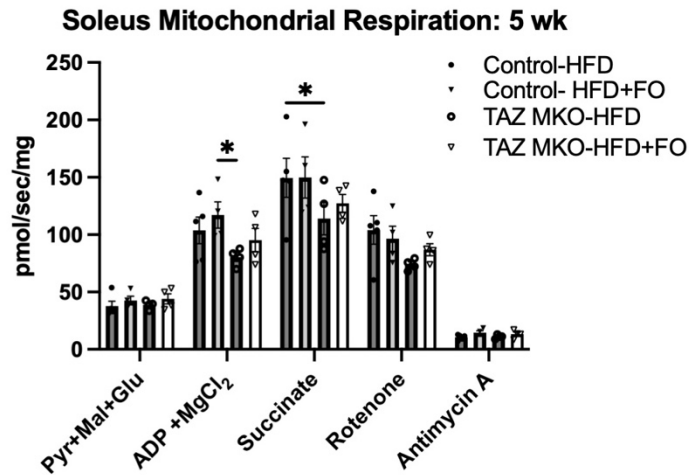
D All Lipid Classes with Genotype in DHA+EPA



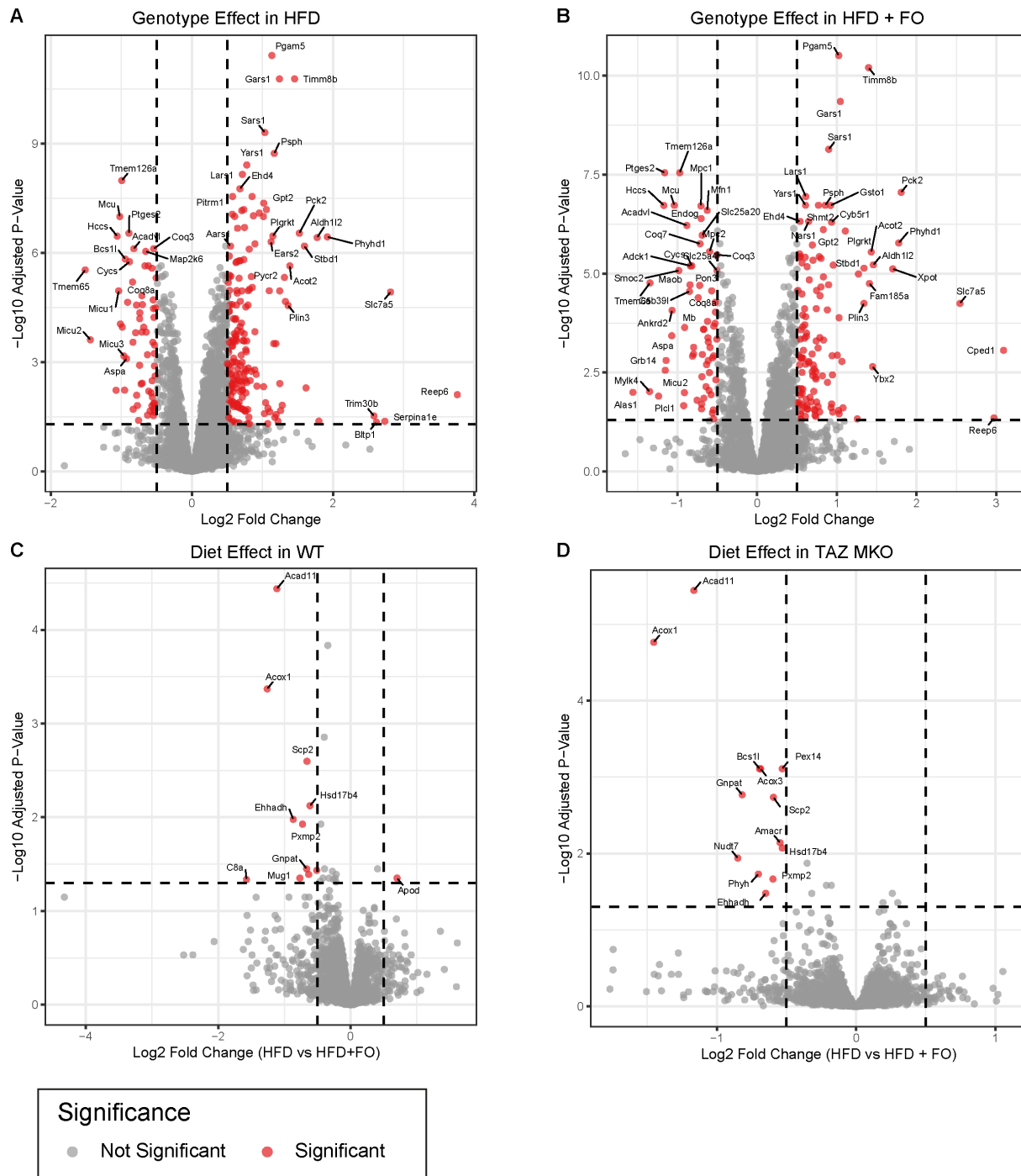
○ All Lipids BHp>0.05 ○ All Lipids BHp<0.05
◆ Class Totals BHp>0.05 ◆ Class Totals BHp<0.05



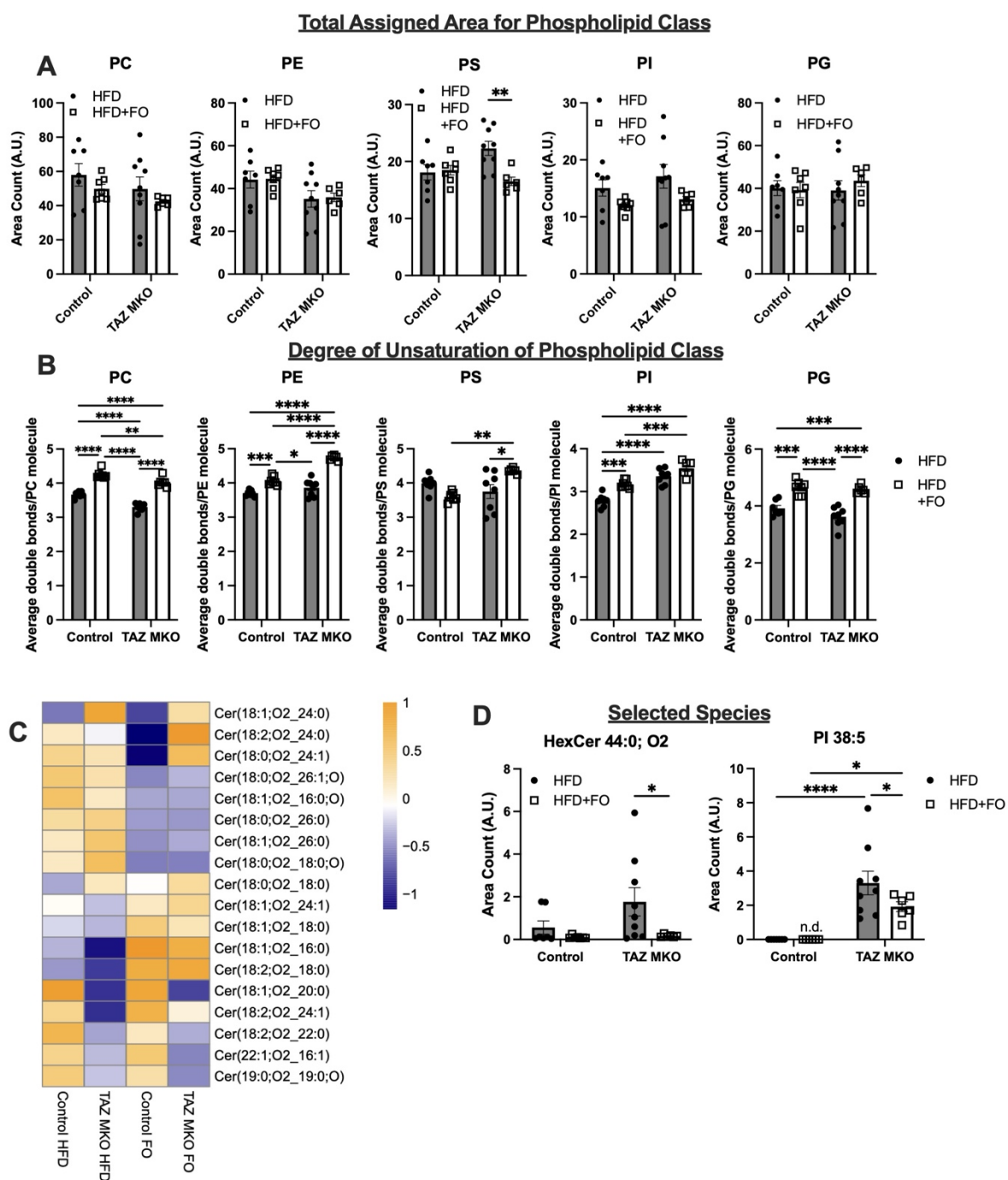
Supplemental Figure 2: Lipidomics analysis of WT and TAZ KO C2C12 cells. Forrest Plots of all lipid classes with (A-B) treatment or (C-D) genotype. (E) Heatmap of all Cardiolipin species. (n=5-6)



Supplemental Figure 3. *Soleus mitochondrial respiration at an early timepoint.* High resolution respirometry in soleus after 5 weeks of diet feeding (n=4-5). Statistical significance was determined by 2-way ANOVA with Holm-Sidak method for multiple comparison testing where appropriate. *p-value≤0.05



Supplemental Figure 4: Proteomics analysis of Control and TAZ MKO gastrocnemius. Volcano plots showing (A-B) genotype (TAZ MKO vs WT) or (C-D) diet (HFD vs HFD+FO) (n=4-6)



Supplemental Figure 5. Effects of diet and genotype on phospholipids in soleus. **A)** Total assigned area for the phospholipid classes. **B)** Degree of unsaturation of phospholipid acyl chains in soleus (n=6-9). **C)** Heatmap of ceramides. **D)** Selected species with diet-genotype interactions. (n=6-9)