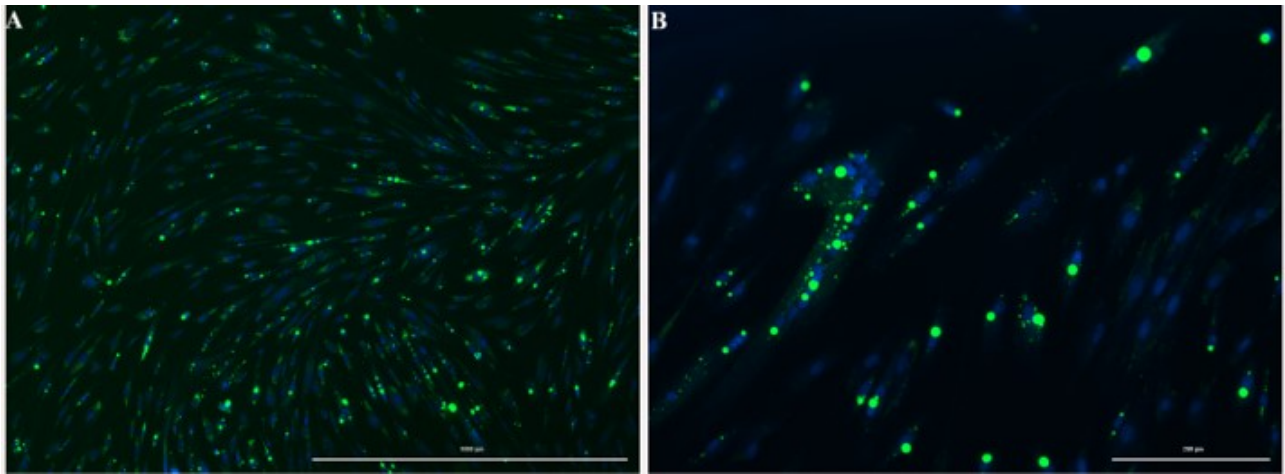
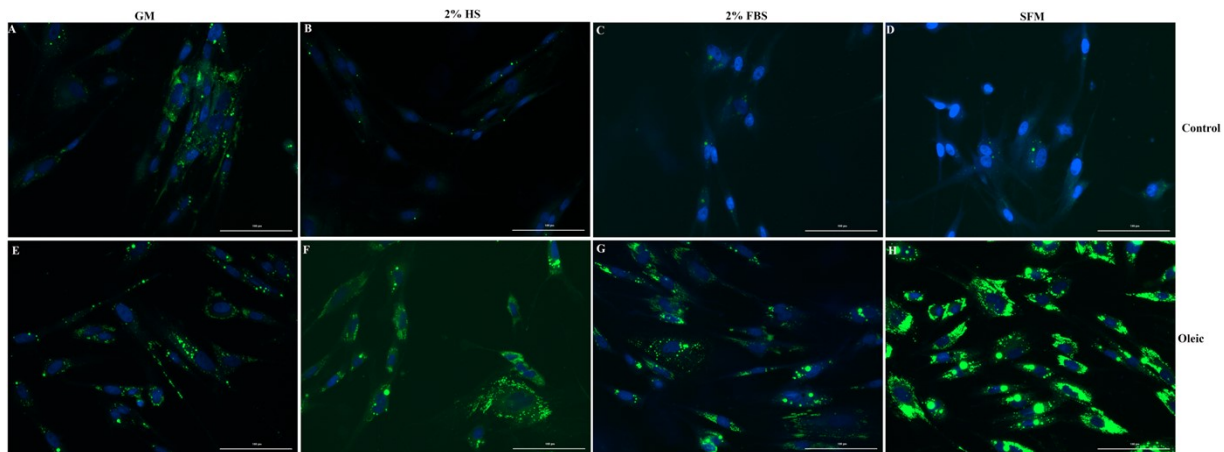


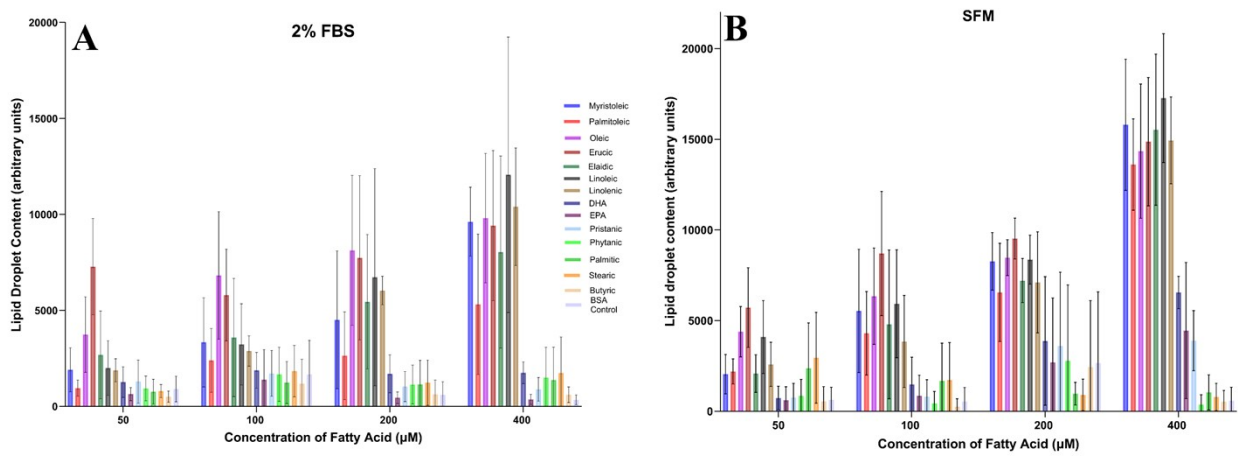
Supplementary Figure 1: Immunostaining of myotubes. Myotubes (stained for F-actin (Red/Phalloidin) and Nuclei (Blue/Hoechst 33342)), Scale bar **A, C, E** : 2000 µm, Scale bar for zoomed in image **B, D, F**: 1000 µm. **A and B**: Nuclei in blue stained with Hoechst 33342; **C and D**: F-actin in red stained with phalloidin; **E and F**: Merged image.



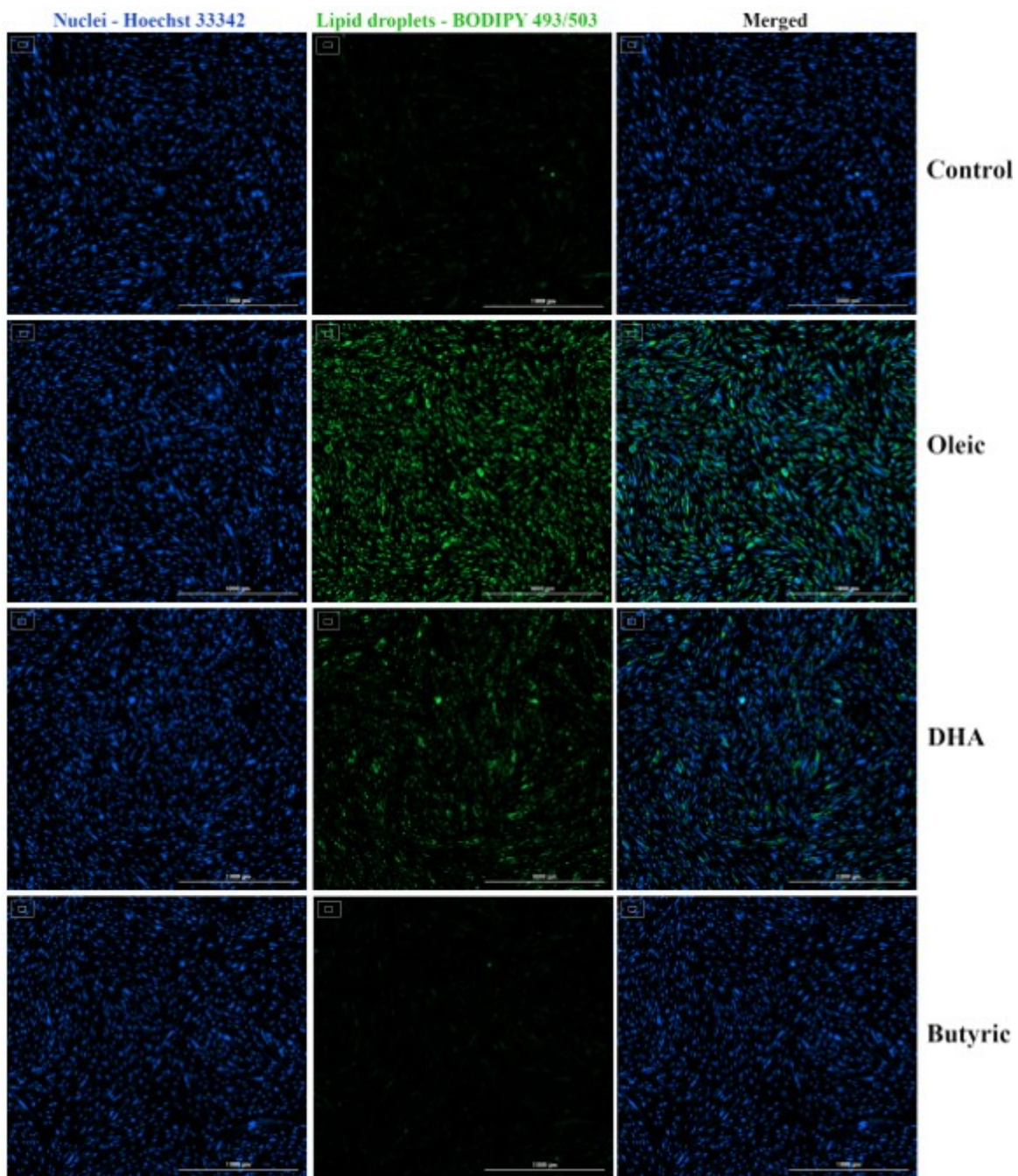
Supplementary Figure 2: Representative images of lipid droplets in myotubes. Myotubes stained for lipid droplets (Green/ Bodipy 493/503) and Nuclei (Blue/Hoechst 33342), Scale bar Fig A: 1000 μm Fig B : 200 μm .



Supplementary Fig 3: Representative fluorescent merged images (20X objective) of SCs exposed to 400 μ M oleic acid in different serum media. Nuclei stained in blue (Hoechst 33342) and lipid droplets in green (Bodipy 493/503); Scale bar 100 μ m. **A:** Cells in GM control **B:** Cells in 2% HS control **C:** Cells in 2% FBS control **D:** Cells in SFM control. **E:** Cells in GM-Oleic **F:** Cells in 2% HS-Oleic **G:** Cells in 2%FBS-Oleic **H:** Cells in SFM-Oleic.



Supplementary Figure 4: Lipid droplet content in SCs exposed to different fatty acids at 50 μM , 100 μM , 200 μM , and 400 μM concentrations in **A:** 2% FBS media and **B:** in SFM.



Supplementary Fig 5: Representative fluorescent images (4X objective) of SCs exposed to 400 μ M of Oleic, DHA and Butyric acid. Scale bar: 1000 μ m. Nuclei in blue (Hoechst 33342) and lipid droplets in green (Bodipy 493/503).