Supplemental Figures.

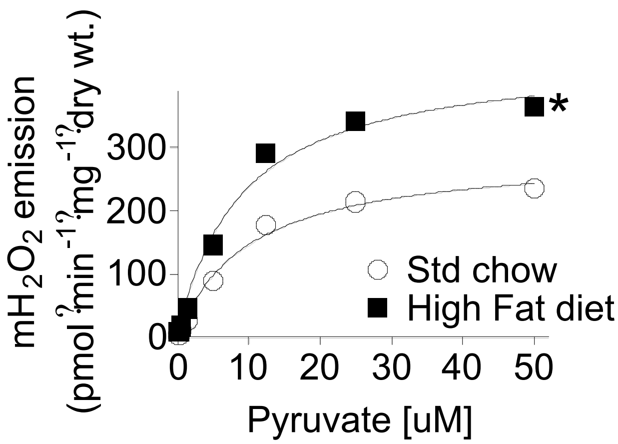

Figure S1. Mitochondrial H_2O_2 emission during titration of pyruvate in the presence of the complex III inhibitor antimycin A. Mitochondrial H_2O_2 emission generated by antimycin A was greater in skeletal muscle fibers prepared from high fat fed compared with control chow fed rats. Permeabilized fibers were prepared from rats fed either standard chow or high fat diet for 6 weeks, and mitochondrial H_2O_2 emission in the presence of antimycin A (10 _g/ml) was measured in both groups with a titration of pyruvate and malate. Data are representative of mean ± S.E.M.; n = 3-4, * $P < 0.05$ vs. Std chow.

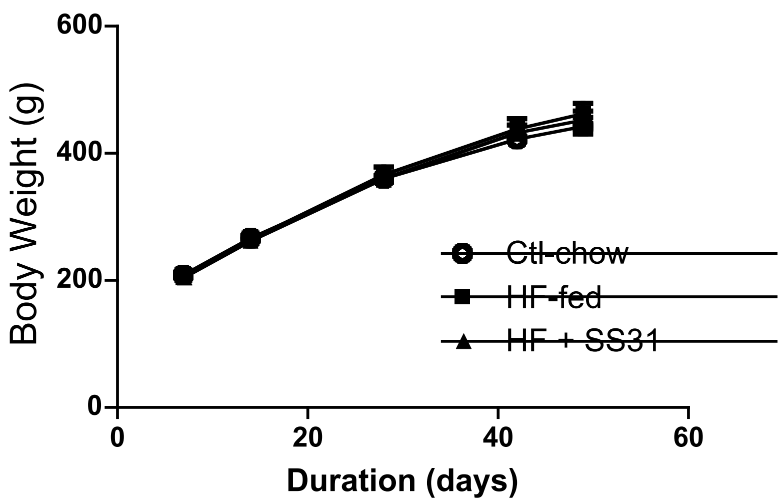

Figure S2. Body weights of rats during the duration of the 6 week high fat feeding study.

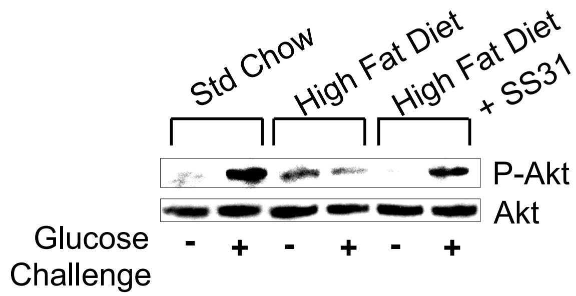

Figure S3. Representative trace of Western blot data shown in Figure 4E.

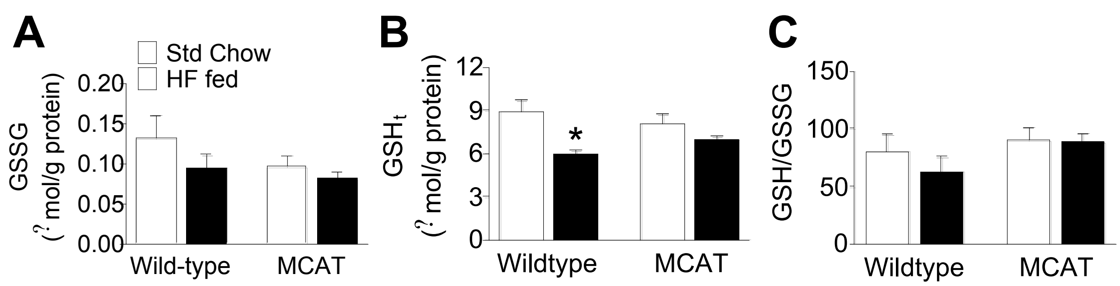

Figure S4. Oxidized glutathione (GSSG), total cellular glutathione (GSH$_t$), and the ratio of GSH to GSSG in red gastrocnemius muscle of wild-type and MCAT mice maintained on either standard rodent chow or a high fat diet (12 h fasted). Data are representative of mean ± S.E.M.; n = 5-6, * P < 0.05 vs. Std chow.

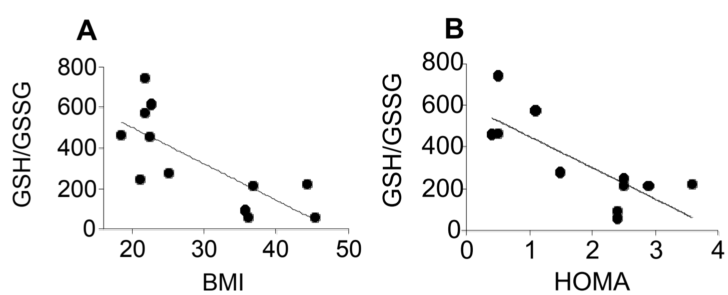

Figure S5. Ratio of GSH/GSSG in human skeletal muscle is negatively associated with (**A**) BMI and (**B**) homeostatic model assessment (HOMA), an index of insulin sensitivity. The r^2 values are 0.57 and 0.62 for (**A**) and (**B**), respectively. For both (**A**) and (**B**), P<0.005.