

Supplementary Materials

Male and female animals respond differently to high-fat diet and regular exercise training in a mouse model of hyperlipidemia

Tóth M.E.<sup>1\*</sup> Dukay B.<sup>1,2#</sup>, Péter M.<sup>1</sup>, Balogh G.<sup>1</sup>, Szűcs G.<sup>3</sup>, Zvara Á.<sup>4</sup>, Szebeni G.J.<sup>4</sup>, Hajdu P.<sup>1</sup>, Sárközy M.<sup>3</sup>, Puskás L.G.<sup>4</sup>, Török Z.<sup>1</sup>, Csont T.<sup>3</sup>, Vigh L.<sup>1</sup> and Sántha M.<sup>1</sup>

<sup>1</sup> Institute of Biochemistry, ELKH Biological Research Centre, Szeged, Hungary,  
<sup>2</sup> Doctoral School in Biology, University of Szeged, Szeged, Hungary,  
<sup>3</sup> MEDICS Research Group, Department of Biochemistry, Interdisciplinary Center of Excellence, University of Szeged, Szeged, Hungary,  
<sup>4</sup> Laboratory of Functional Genomics, ELKH Biological Research Centre, Szeged, Hungary  
# These authors contributed to the work equally.  
\* Corresponding author

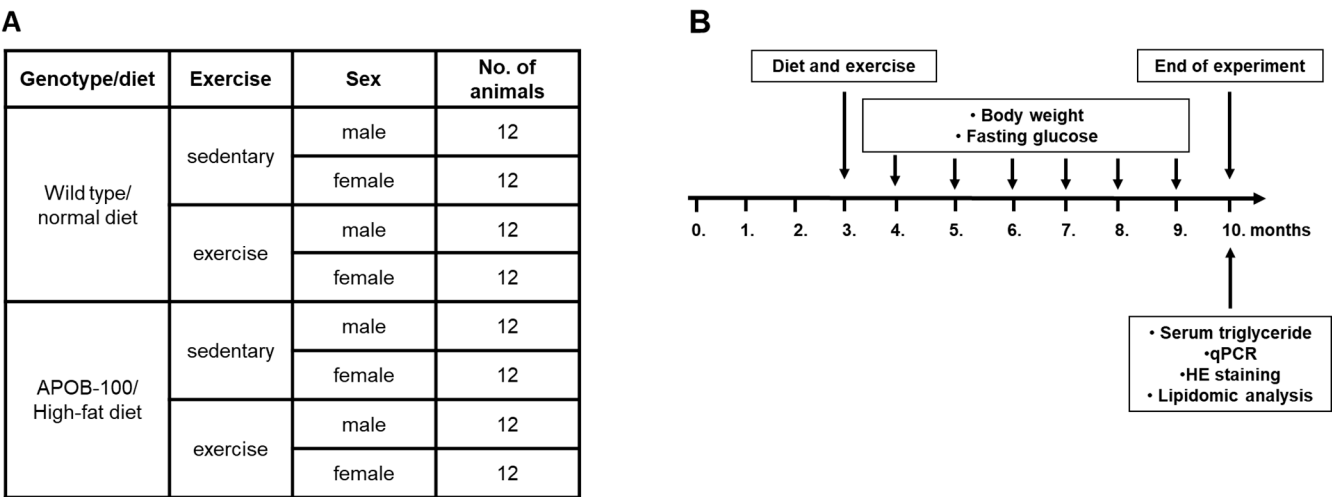
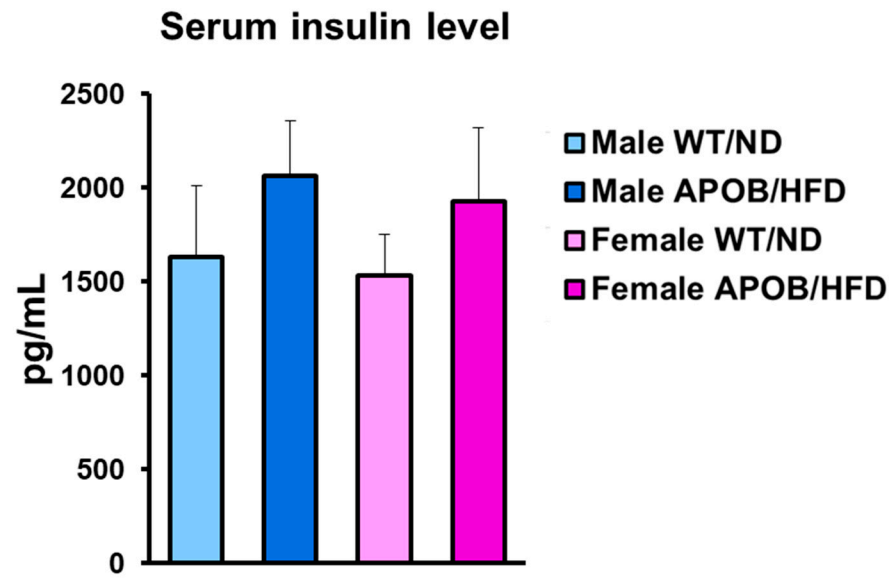
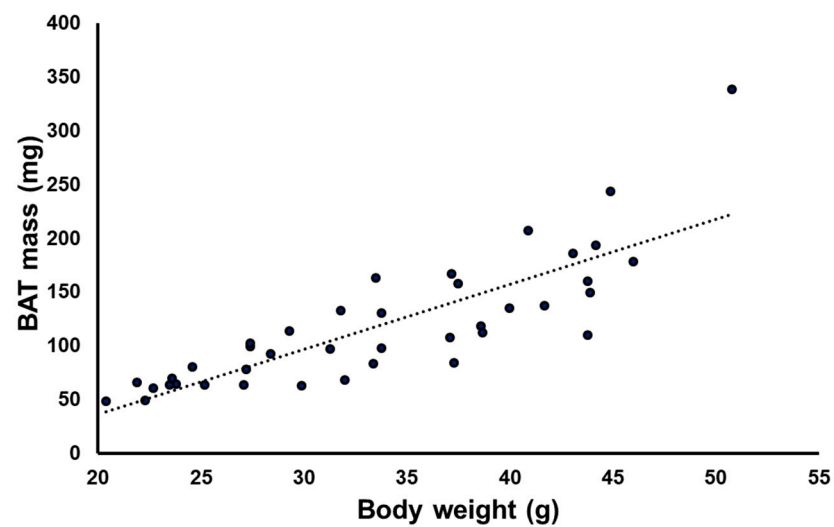


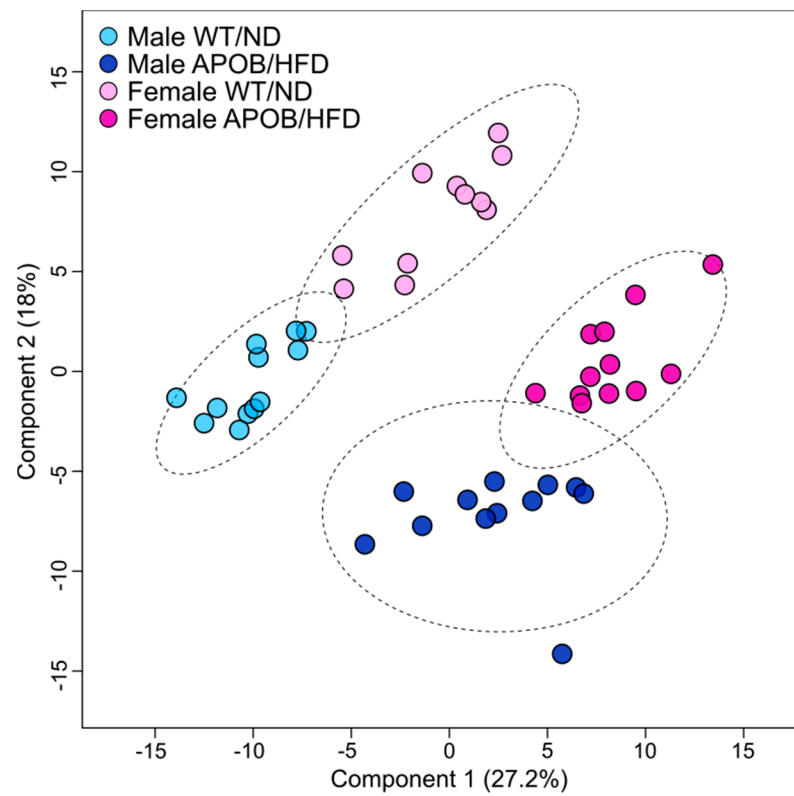
Figure S1. (a) Experimental groups and (b) schedule of the experiment.



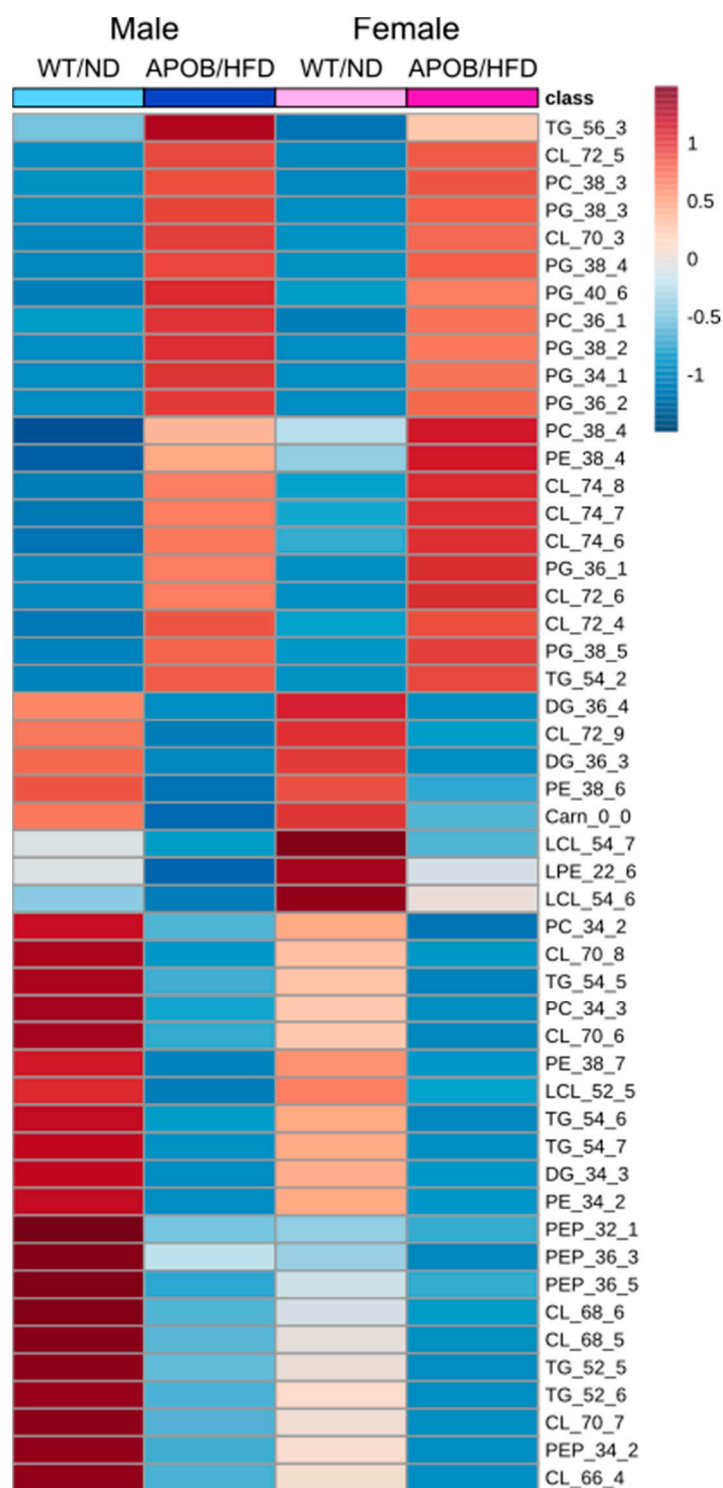
**Figure S2.** Serum insulin concentration quantified using a MILLIPLEX® Mouse Adipokine Multiplex Immunoassay (n=9-10 animals/group).



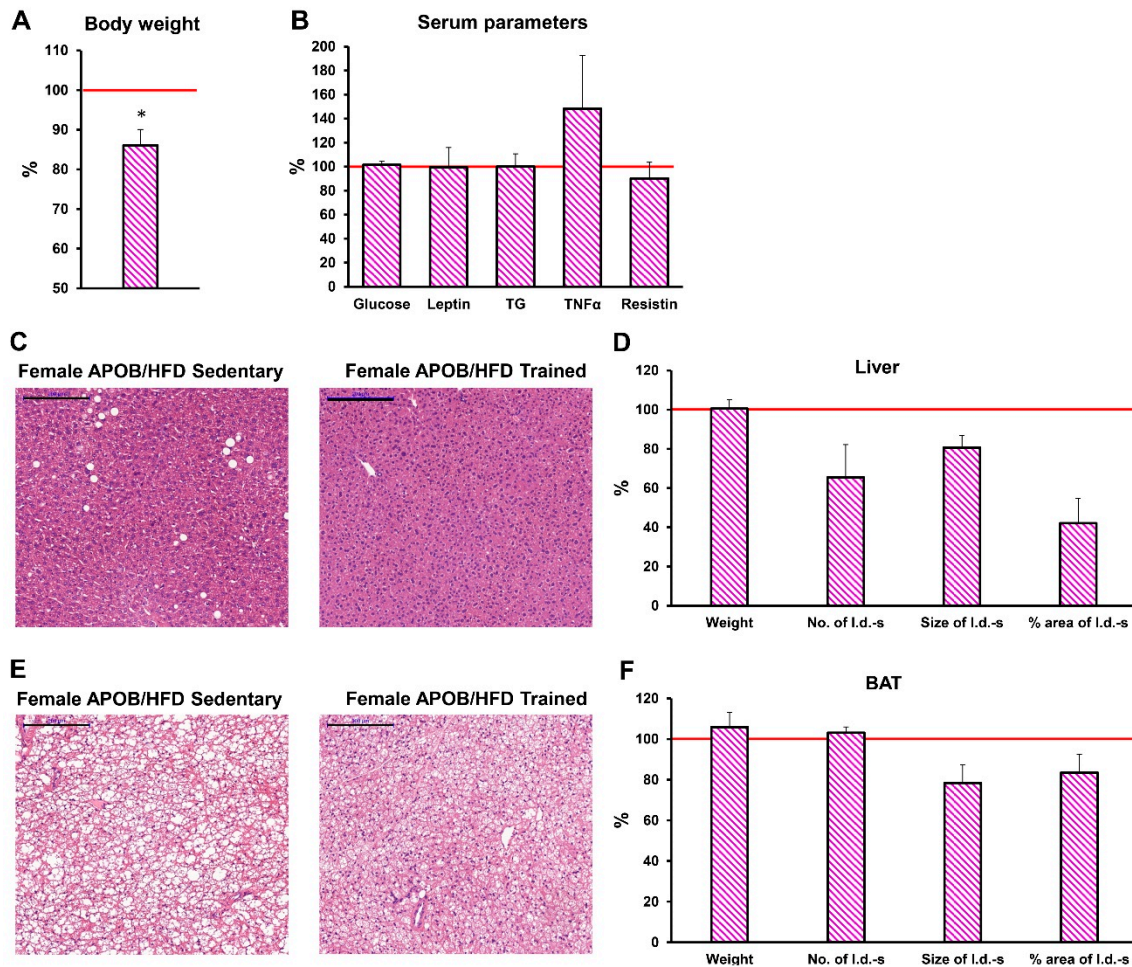
**Figure S3.** Correlation between body weight and BAT mass in sedentary groups.  $r=0.816$ ,  $P=1.5E-11$ .



**Figure S4.** PLS-DA scores plot of lipidomic datasets based on the membrane lipids only.



**Figure S5.** Heatmap representation of hierarchical cluster analysis of lipidomic datasets for sedentary WT/ND and APOB/HFD groups. Top 50 most significant species were selected based on ANOVA; distance measure, Euclidean; clustering algorithm, Ward; heat color code represents normalized values (z-scores).



**Figure S6.** Effects of exercise training in HDF-fed female APOB-100 transgenic mice. Magenta striped columns represent the differences in the given value in regularly trained APOB100/HFD female mice, expressed as the percentage of the corresponding value for sedentary APOB100/HFD females. Scale bar: 200  $\mu$ m.  $n = 12$  mice per group for body, liver, and BAT weight and serum glucose measurements,  $n = 10$  mice per group for serum leptin, TNF $\alpha$ , and resistin concentration measurements,  $n = 6$  mice per group for the quantification of lipid accumulation. Values are presented as mean  $\pm$  SEM; \* denotes  $P < 0.05$ ; WT/ND, wild type mice on normal diet; APOBHFD, APOB-100 transgenic mice on high-fat diet; BAT, brown adipose tissue; l.d., lipid droplet.