



Figure S1: Eight-week-old male C57/B6 mice were fed with HFD for 6 weeks to establish an obese mice model, and then these obese male C57/B6 mice were divided into two groups randomly: The obesity group (Ob) and the exercise group (Ob + Exe) ( $N = 9,9$ ). (A) Body composition was measured before exercise for these two groups using MRI. (B) Measurement of plasma glucose during GTT of the obesity ( $N = 9$ ) and exercise ( $N = 7$ ) group. (C) Representative bone marrow from tibia of both the obesity and exercise groups ( $N = 2,2$ ) was isolated for RNA-Seq analysis. Results of biological process analysis for highly variable genes identified by significant DEG in the bone marrow. Two-sided Student t-tests were used for statistical analyses. Data are presented as mean  $\pm$  SD. BW, body weight; GTT, Glucose tolerance test; MRI, magnetic resonance imaging