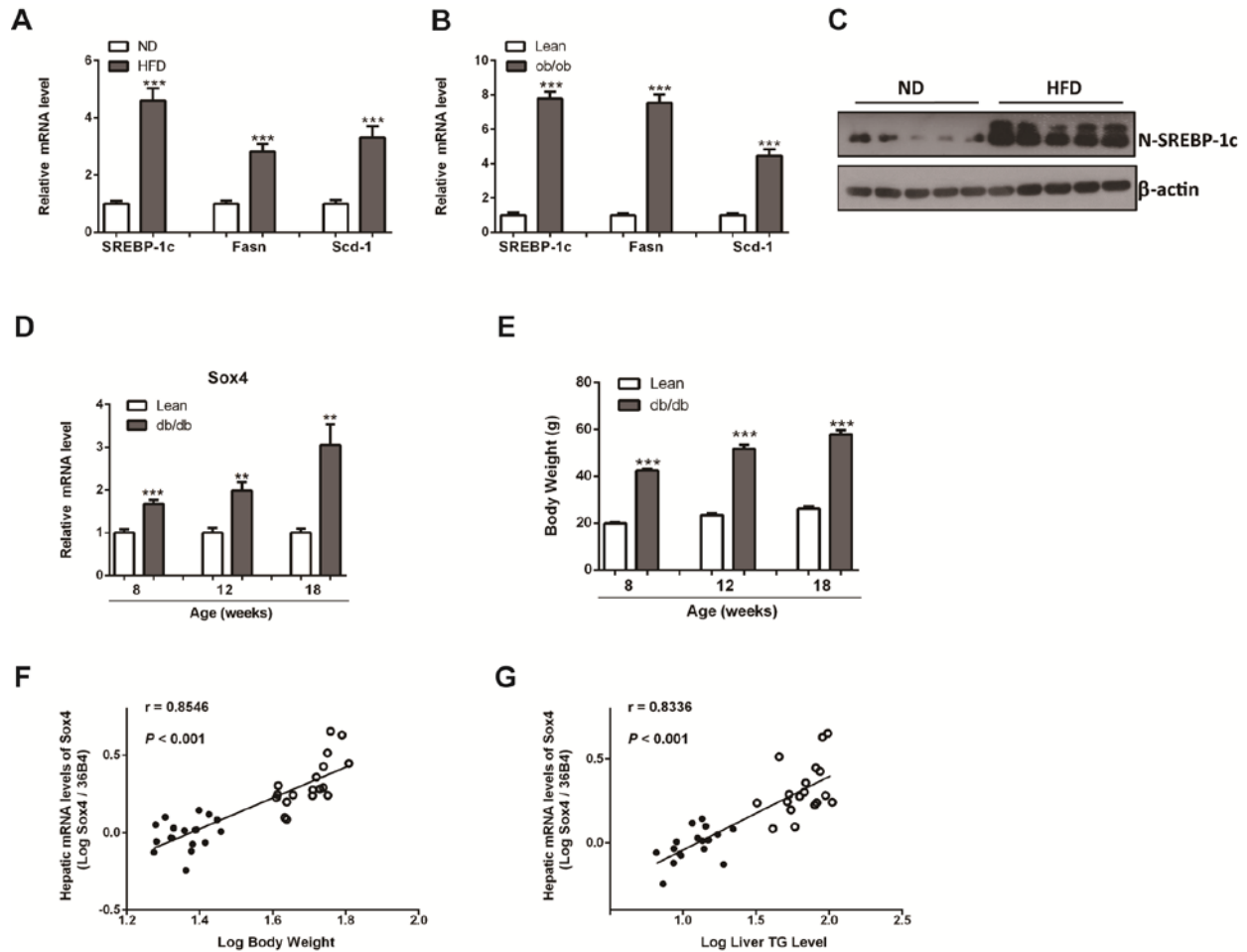


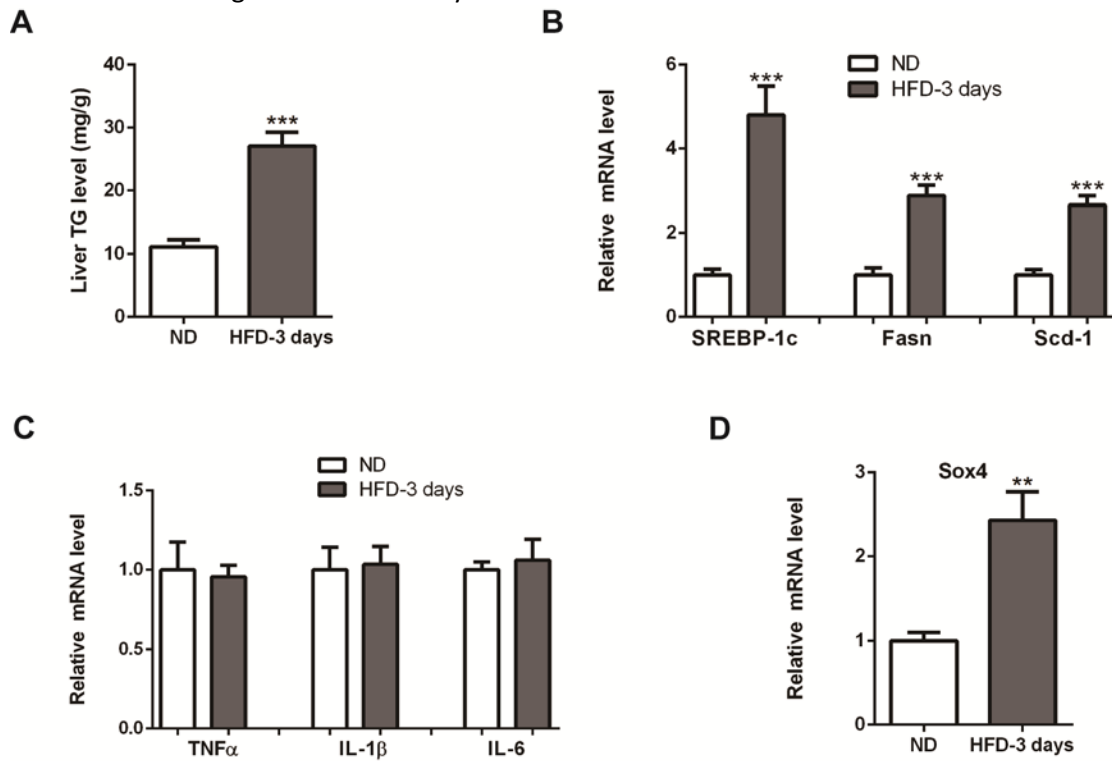
SUPPLEMENTARY DATA

Supplementary Figure 1. (A-B) Relative mRNA levels of lipogenic genes in the livers of HFD and *ob/ob* mice (n=6). (C) Protein levels of nuclear SREBP-1c in the livers of HFD and ND mice were determined by western blots. (D) Relative mRNA levels of *Sox4* in the livers of *db/db* and lean mice at different ages (n=6). (E) Body weight of *db/db* and lean mice at different ages. (n=6) (F) Correlation between hepatic *Sox4* mRNA levels and body weight (n=36) in *db/db* (white dots, n=18) and lean mice (black dots, n=18) at different ages. (G) Correlation between hepatic *Sox4* mRNA levels and TG contents (n=36) in *db/db* (white dots, n=18) and lean mice (black dots, n=18) at different ages.

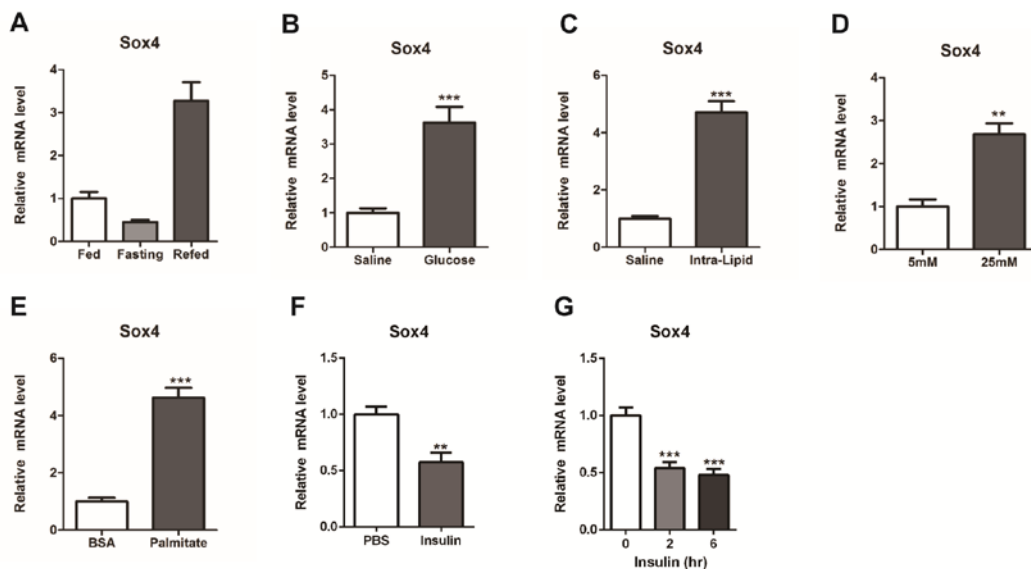


SUPPLEMENTARY DATA

Supplementary Figure 2. (A) Hepatic TG contents in C57BL/6 mice fed a normal diet or high fat diet for 3 days (n=5). (B-D) Relative mRNA levels of lipogenic genes (B), pro-inflammatory cytokines (C) and *Sox4* (D) in C57BL/6 mice fed a normal diet or high fat diet for 3 days.

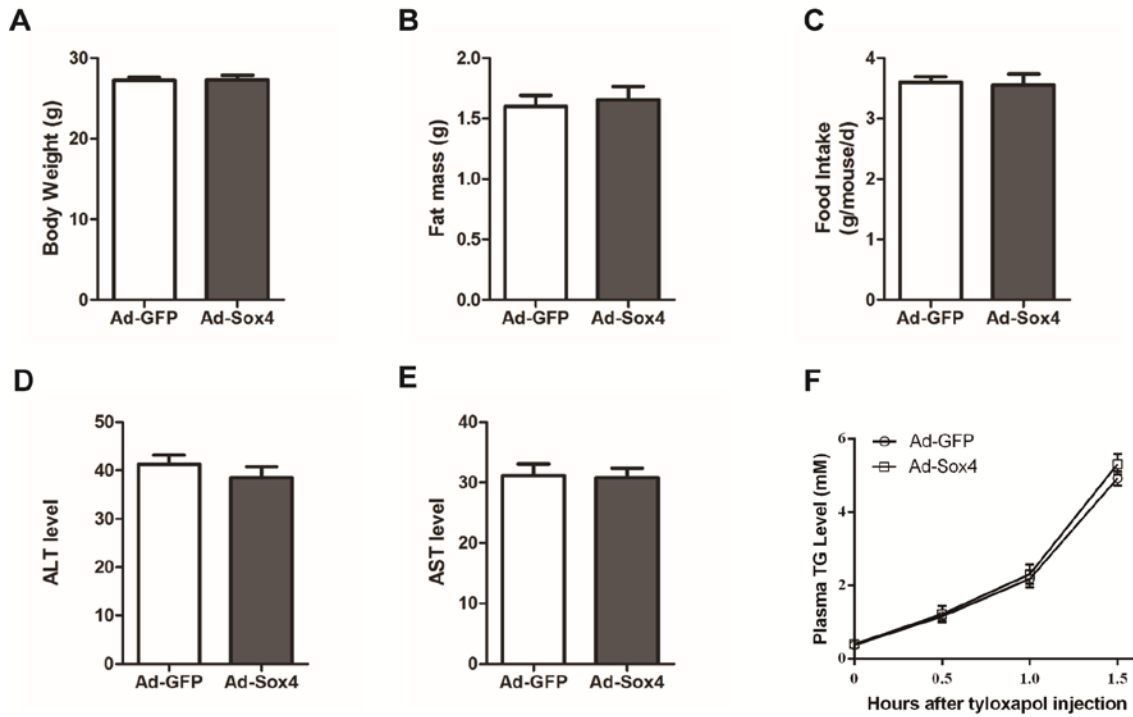


Supplementary Figure 3. (A) Relative mRNA levels of *Sox4* in C57BL/6 mice under fed or 24-h fasted or 24-h fasted/6-h refeed conditions (n=5). (B-C) Relative mRNA levels of *Sox4* in C57BL/6 mice infused with high glucose or lipid via the jugular vein (n=5-6). (D-E) Relative mRNA levels of *Sox4* in Hep1-6 cells treated with high glucose or palmitate. (F) Relative mRNA levels of *Sox4* in the Hep1-6 cells treated with insulin or PBS for 6 hr. (G) Relative mRNA levels of *Sox4* in the liver of C57BL/6 mice treated with insulin for the indicated times (n=6).

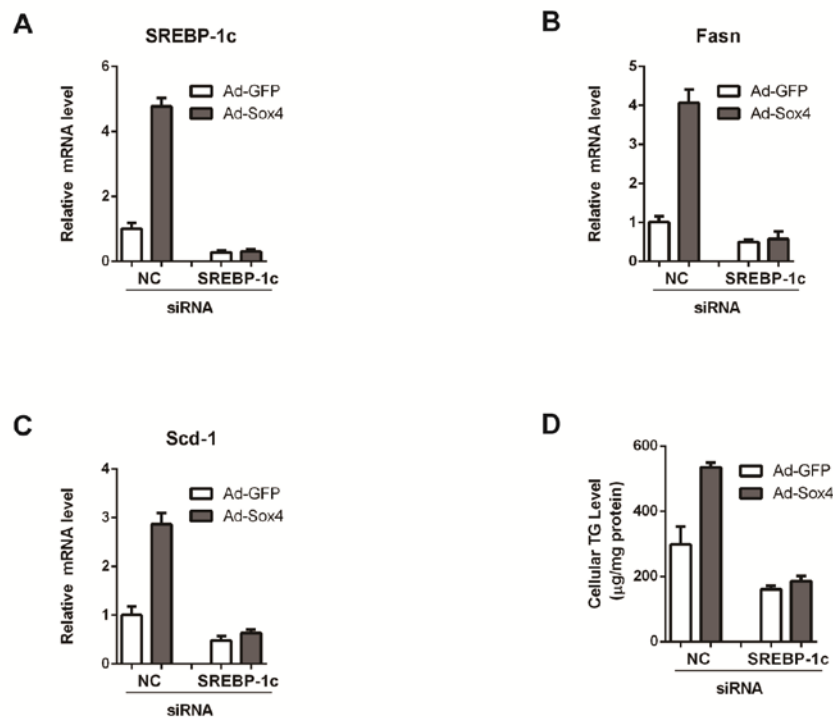


SUPPLEMENTARY DATA

Supplementary Figure 4. (A-E) Body weight, fat mass, food intake, plasma ALT and AST levels in C57BL/6 mice injected with Ad-GFP or Ad-Sox4 (n=8). (F) Increase in plasma TG following intravenous injection of tyloxapol (500 mg/kg) in mice transduced with GFP or Sox4 adenoviruses (n=8).

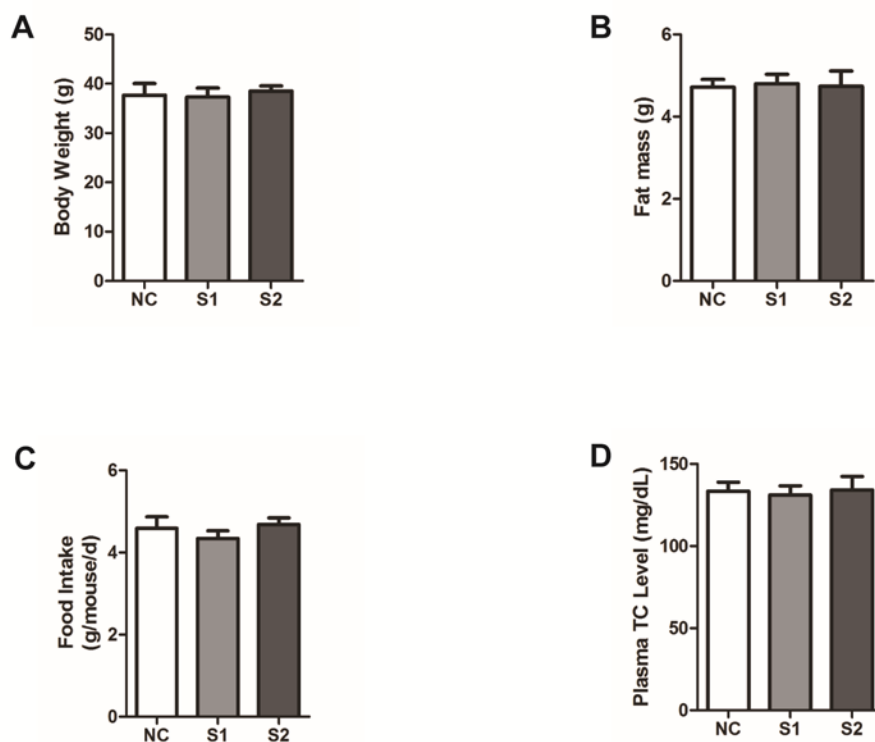


Supplementary Figure 5. (A-C) Relative mRNA levels of *SREBP-1c*, *Fasn* and *Scd-1* in the Hep1-6 cells. Cells were transfected with siRNA oligos targeting *SREBP-1c* or negative control for 24 hr and then treated with adenovirus containing GFP or Sox4 for another 24 hr. (D) Cellular TG contents in the Hep1-6 cells as indicated in (A-C).



SUPPLEMENTARY DATA

Supplementary Figure 6. (A-D) Body weight, fat mass, food intake and plasma TC in *ob/ob* mice with *Sox4* deficiency (n=8-9).



SUPPLEMENTARY DATA

Supplementary Figure 7.

(A) Hepatic *Sox4* mRNA and protein levels in three groups of HFD-induced obese mice. Mice were administrated with 2 adenoviral shRNAs targeting *Sox4* (S1 and S2) or a negative control (NC) through tail vein injection. 14 days later, mice were sacrificed and tissues were collected for analysis (n=7-8).

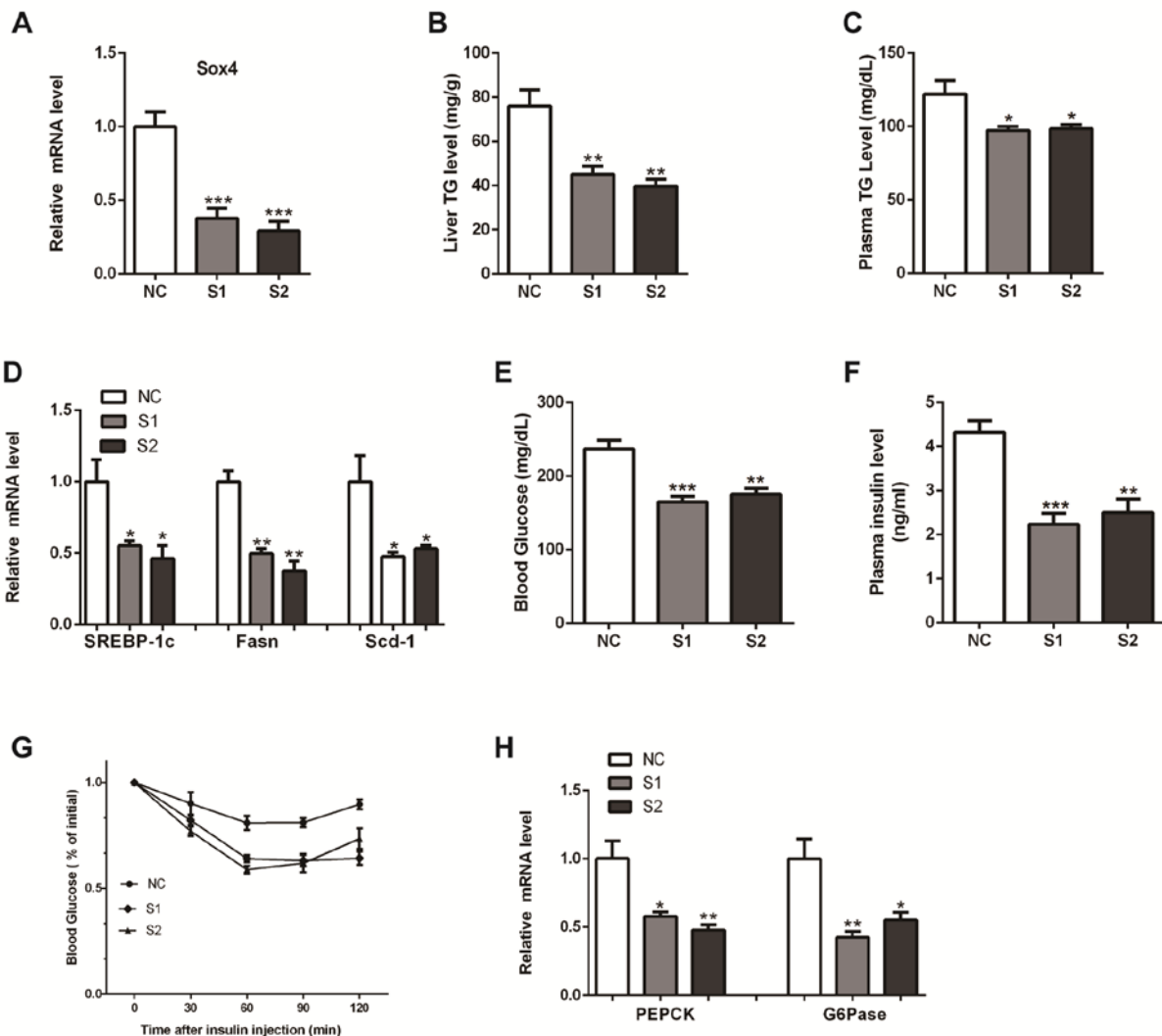
(B-C) Liver TG content and plasma TG levels in three groups of HFD mice.

(D) Relative mRNA levels of lipogenic genes in three groups of HFD mice.

(E-F) Blood glucose and plasma insulin levels in HFD mice. Blood glucose concentrations were measured at day 5 after adenovirus injection. Plasma were collected at day 14 after adenovirus injection.

(G) Insulin tolerance tests in HFD mice at day 7 after adenovirus injection.

(H) Relative mRNA levels of *PEPCK* and *G6Pase* in livers of HFD mice



SUPPLEMENTARY DATA

Supplementary Figure 8.

(A) Relative mRNA levels of *Trb3* in the livers of C57BL/6 mice overexpressing *Sox4* or *GFP* (n=8).

(B) Relative mRNA levels of *Trb3* in the livers of *ob/ob* mice treated with *Sox4* shRNA or negative control (n=8-9).

