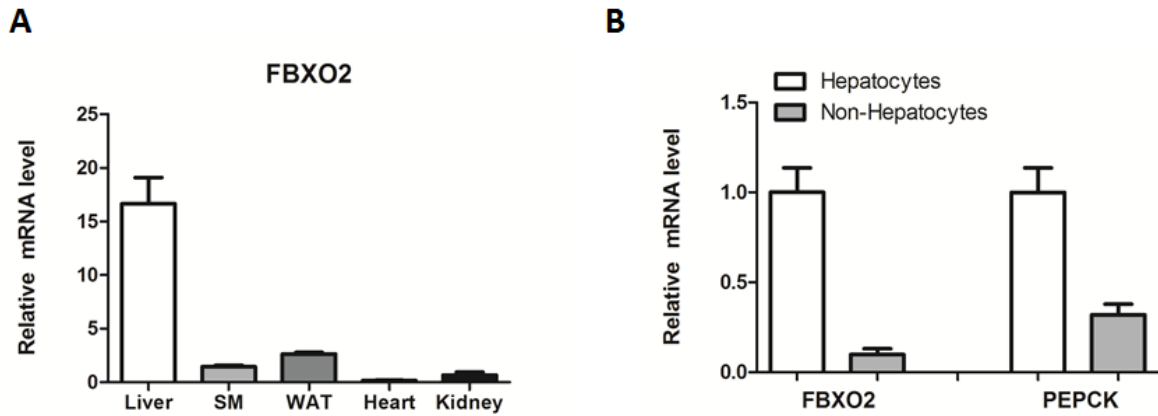


SUPPLEMENTARY DATA

**Supplementary Figure 1**

(A) Relative mRNA levels of FBXO2 in the liver, skeletal muscle (SM), white adipose tissue (WAT), heart and kidney from C57BL/6 mice. n=4.

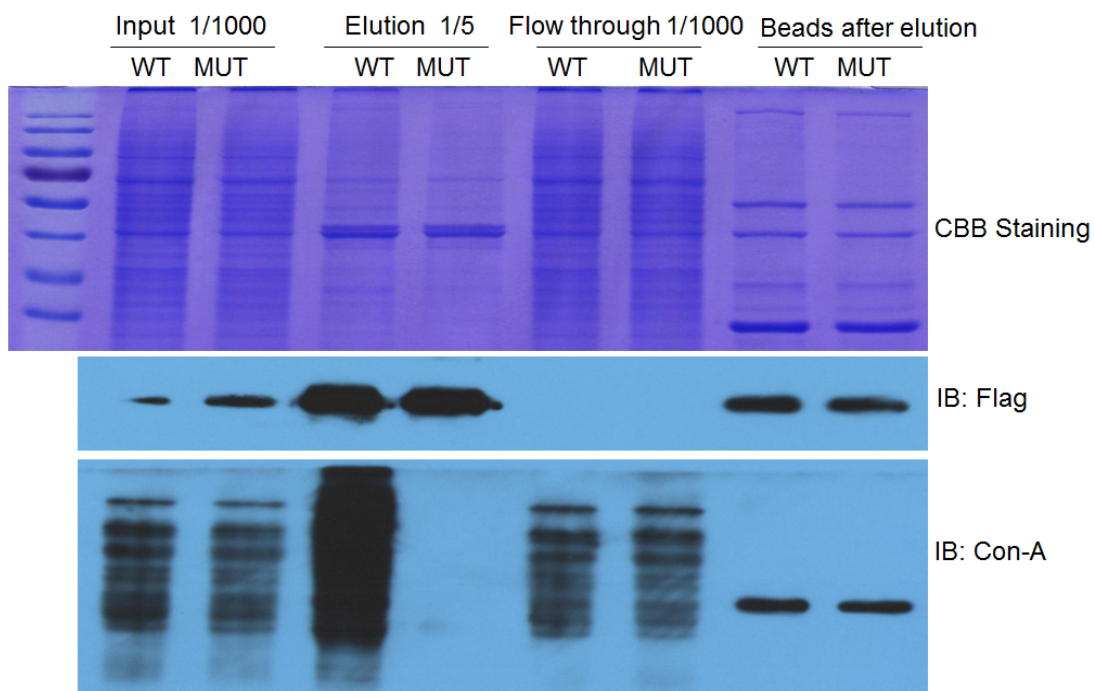
(B) Real-time PCR quantification of FBXO2 in the hepatocyte versus non-hepatocyte fraction of C57BL/6 mice. The expression of PEPCK was used as a positive control. n=4.



SUPPLEMENTARY DATA

**Supplementary Figure 2**

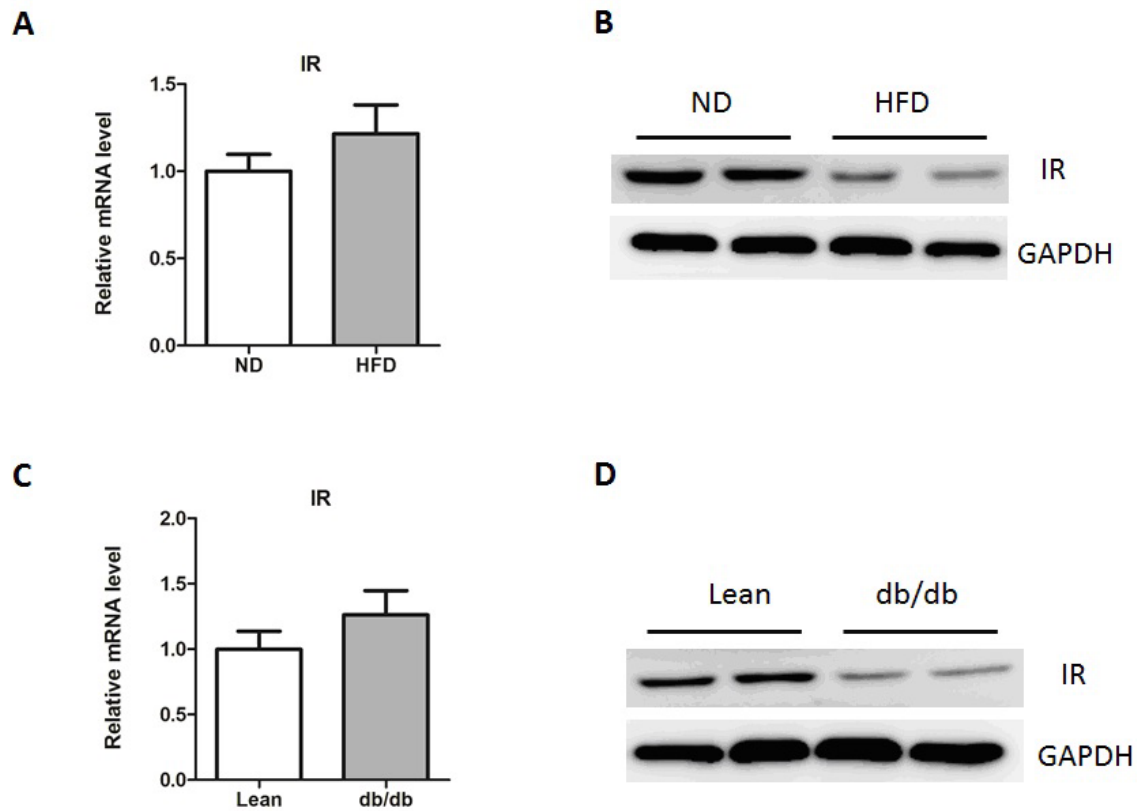
Purification of the protein complexes from HEK293T cells stably expressing WT and MUT FBXO2. The whole purification procedures were monitored by Coomassie Brilliant Blue (CBB) staining as well as Western blots with anti-Flag antibody. The glycoproteins were visualized with ConA-HRP.



SUPPLEMENTARY DATA

**Supplementary Figure 3**

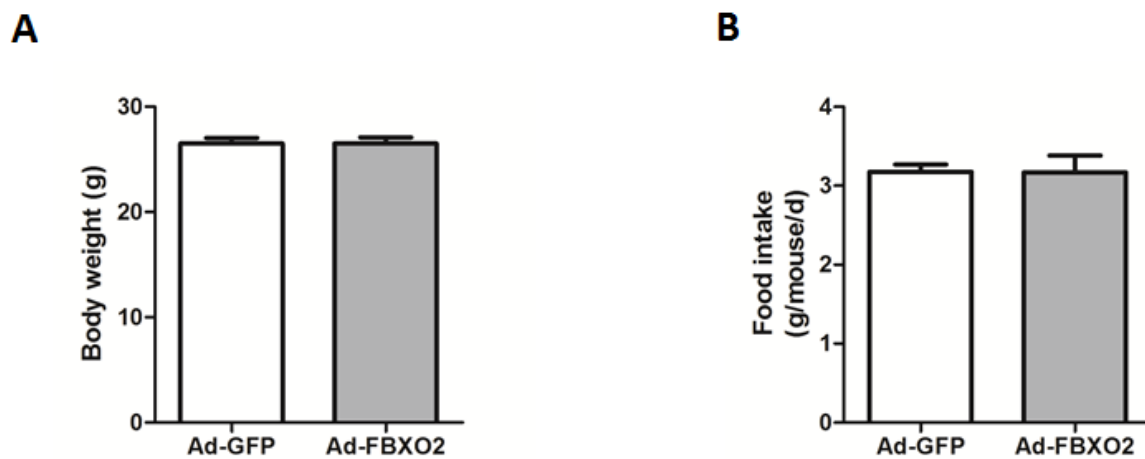
(A-D) Relative mRNA and representative protein levels of IR in the liver from lean and obese mice. n=6-8.



SUPPLEMENTARY DATA

**Supplementary Figure 4**

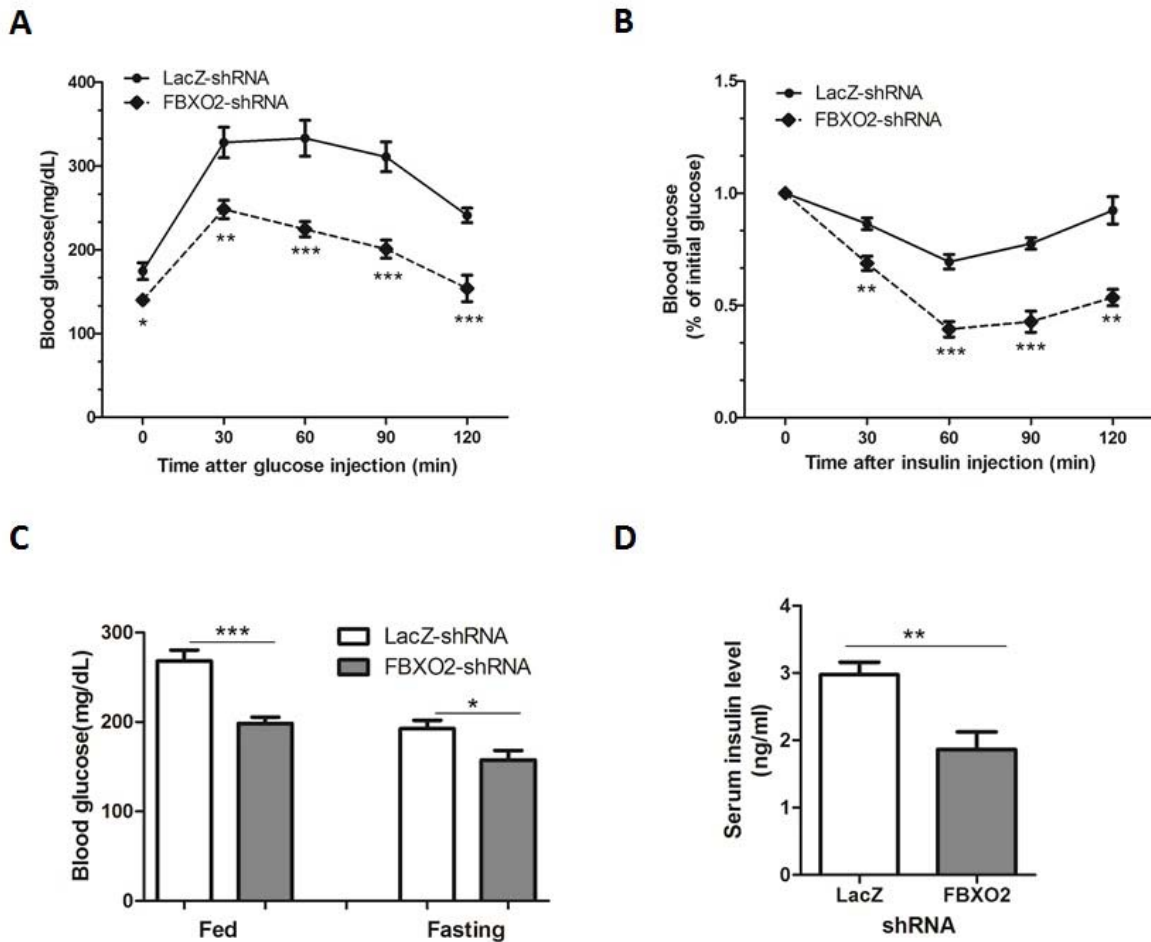
(A-B) Body weight (A) and food intake (B) in C57BL/6 mice administrated with adenoviruses expressing FBXO2 or GFP.



SUPPLEMENTARY DATA

**Supplementary Figure 5**

(A-D) Glucose (A) and insulin tolerance tests (B), blood glucose (C) and insulin (D) levels in HFD-induced obese mice administrated with adenoviral FBXO2 shRNA or LacZ shRNA. (n = 6-7).

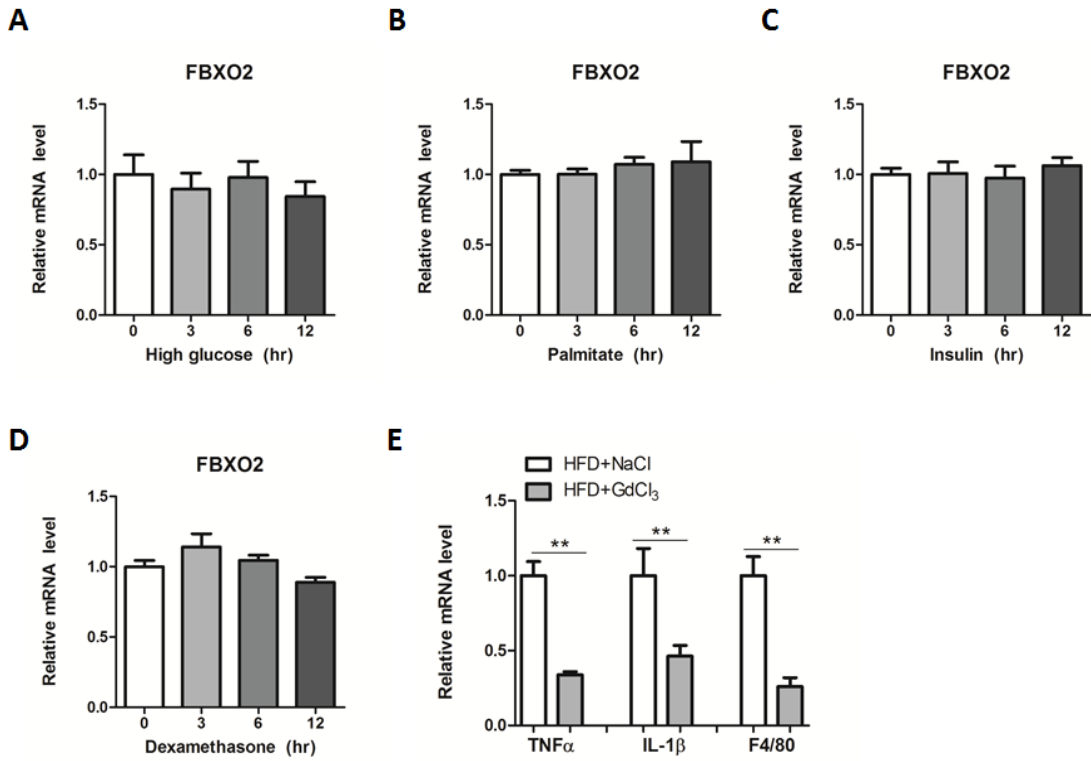


SUPPLEMENTARY DATA

**Supplementary Figure 6**

(A-D) Relative mRNA levels of FBXO2 in MPHs treated with high glucose (25mM), palmitate (100 $\mu$ M), insulin (100nM) and dexamethasone (100nM) for the indicated time.

(E) Relative mRNA levels of TNF $\alpha$ , IL-1 $\beta$  and F4/80 in HFD mice treated with GdCl<sub>3</sub> or NaCl.

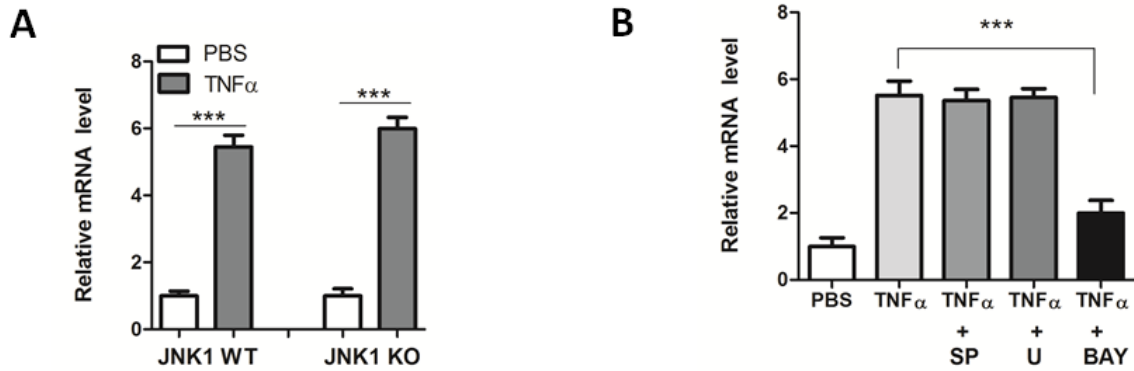


SUPPLEMENTARY DATA

**Supplementary Figure 7**

(A) Relative mRNA levels of FBXO2 in JNK1 wild-type (WT) or knockout (KO) MPHs. Cells were treated with TNF $\alpha$  or PBS for 6 hr.

(B) Relative mRNA levels of FBXO2 in MPHs treated with TNF $\alpha$ . Cells were pre-treated with SP600125 (SP), U0126 (U) or BAY 11-7082 (BAY) for 4 hr and then administrated with TNF $\alpha$  for another 6 hr.



## SUPPLEMENTARY DATA

### **Supplementary Table 1**

Dys-regulated FBPs in livers from C57BL/6 mice fed a normal diet (ND) or high-fat-diet (HFD).

### **Supplementary Table 2**

List of proteins identified from WT and MT FBXO2 interacting proteins.

### **Supplementary Table 3**

GO analysis of glycoproteins identified from WT FBXO2 interacting proteins.