Figure S1. Genotyping products of SIRT2-WT and SIRT2-KO rats. Product sizes were 540 and 380 bp for WT and KO alleles, respectively.

Figure S2. Metabolic phenotype in female SIRT2-WT and SIRT2-KO rats. (A) Body weight curves of SIRT2-WT and SIRT2-KO rats (*n*=6). **(B)** Food intake in SIRT2-WT and SIRT2-KO rats at ~15 weeks of age (*n*=4). **(C)** Random blood glucose (*n*=15). **(D)** Blood glucose levels in body weight-matched rats were measured at the indicated times after 16-h fasting during IPGTT(*n*=14). Data are expressed as means ± SEM. $^{**}P< 0.01$, $^{***}P< 0.001$ *vs* WT rats.

Figure S3. SIRT2 knockout or inhibition has no impact on gluconeogenic gene expressions. (A-B) mRNA and protein expressions of PEPCK in the liver of SIRT2-WT and SIRT2-KO male rats under the status of fasting or refeeding (*n*=4). **(C)** mRNA expression of gluconeogenic genes in the liver of SIRT2-WT and SIRT2-KO male rats (*n*=4). **(D)** Protein level of PEPCK in primary mouse hepatocytes treated with 3 μM AGK2. Data are expressed as means ± SEM. $^{***}P< 0.001$ *vs* WT rats.

Figure S4. mRNA level of SIRT2 in rat islets at low and high glucose concentrations.

Figure S5. Visualization of metabolite profiles is presented by volcano-plots. Up-regulated and down-regulated metabolites in SIRT2-KO islets versus SIRT2-WT islets were distributed in the right and left side, respectively (VIP> 1, blue points indicate $P<0.1$, green points indicate $P<0.05$).

Figure S6. mRNA expressions of three aldolase isozymes (A, B, and C) in rat islets. Data are expressed as means ± SEM. $^{***}P< 0.001$ *vs* ALDOA.

Figure S1

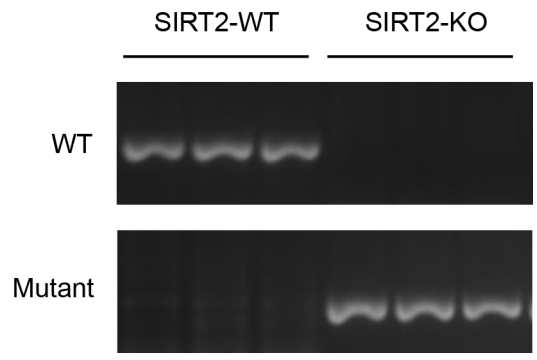


Figure S2

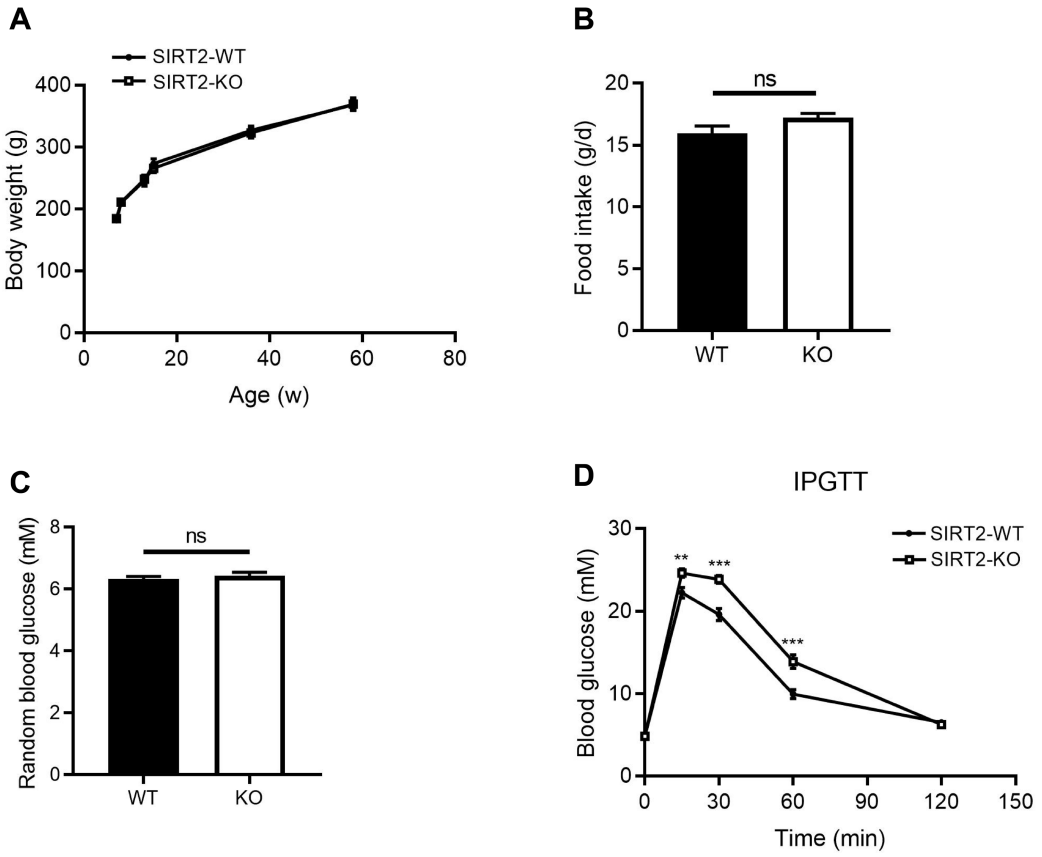


Figure S3

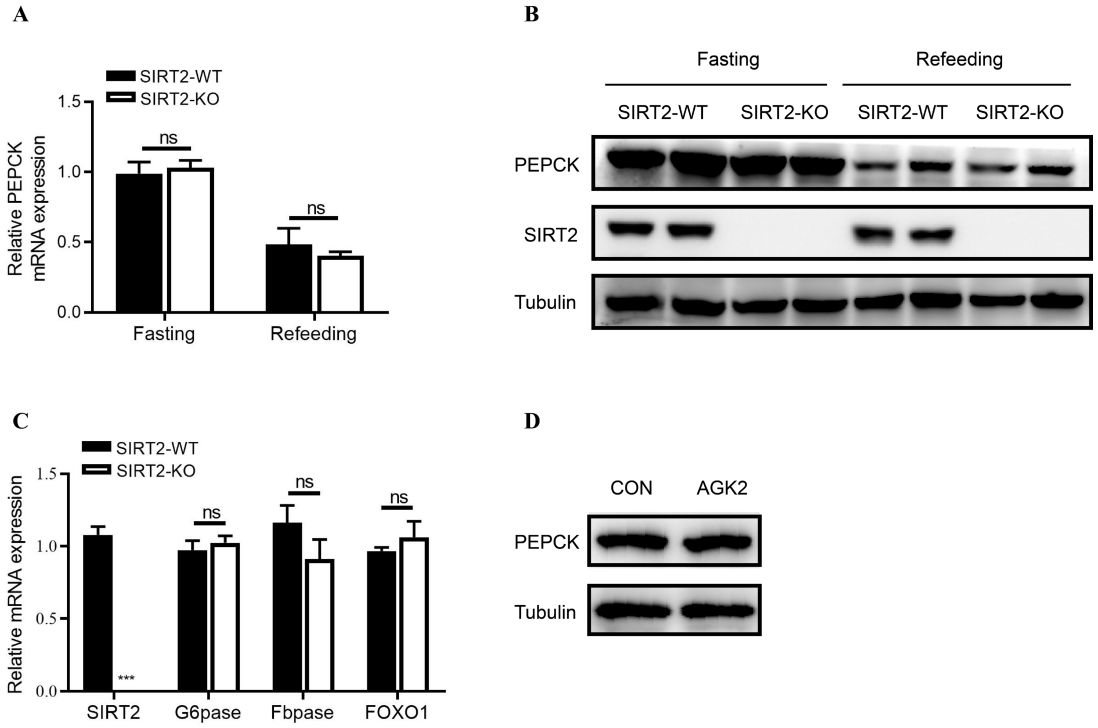


Figure S4

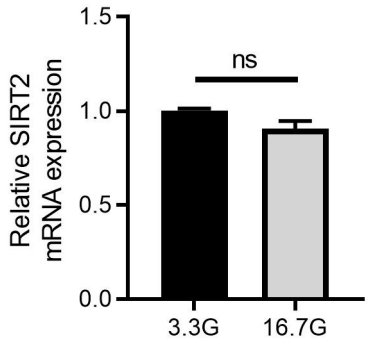


Figure S5

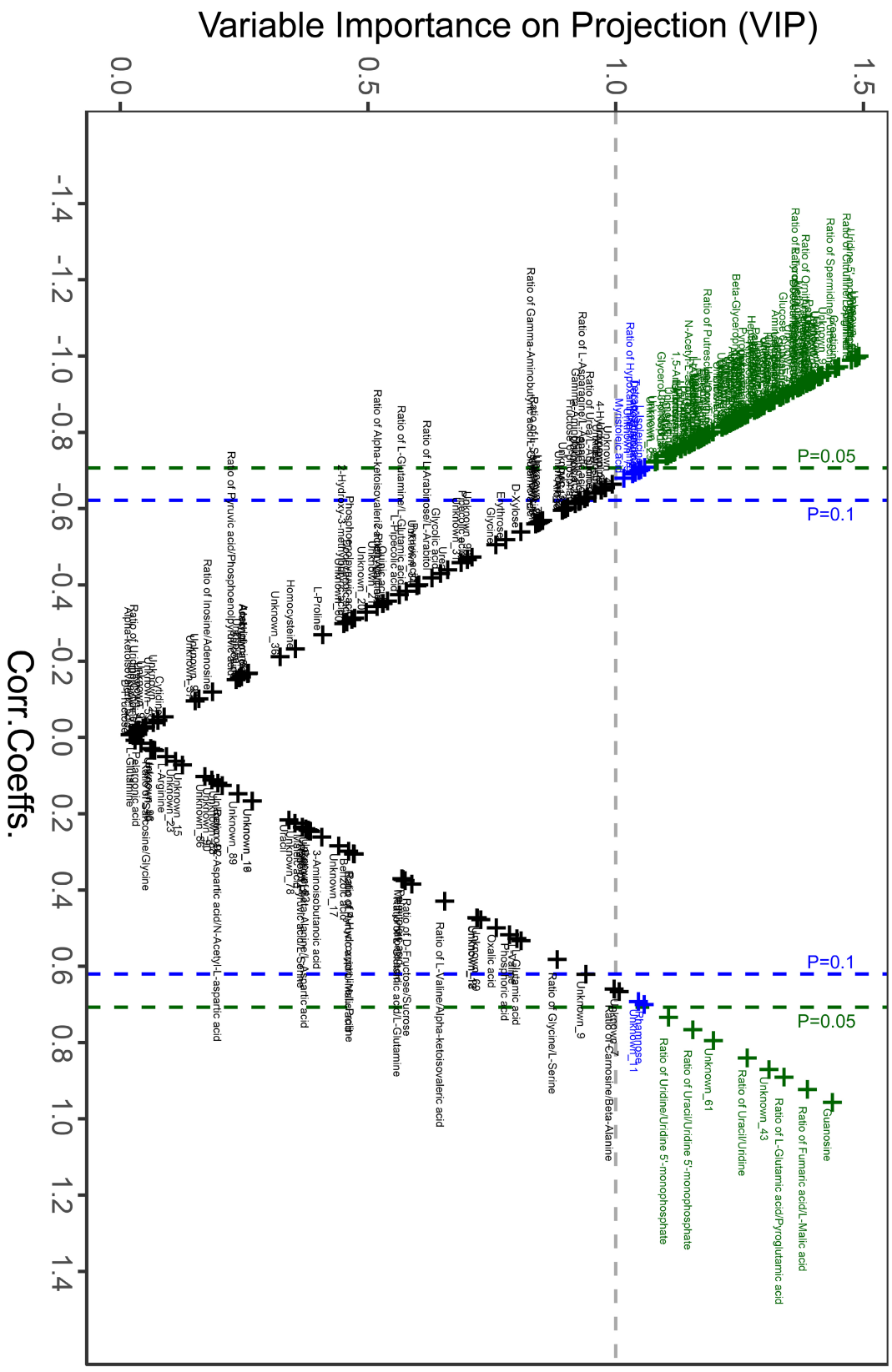
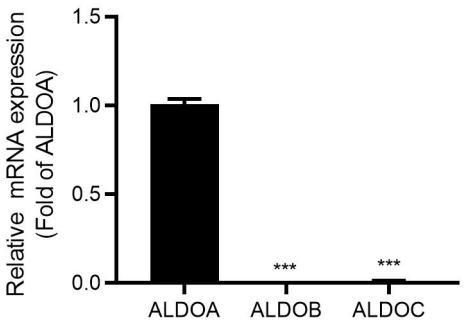

Variable Importance on Projection (VIP)
Corr.Coeffs.
P=0.05
P=0.1
P=0.1
P=0.05

Figure S6


Relative mRNA expression
(Fold of ALDOA)
1.5
1.0
0.5
0.0
***
***
ALDOA
ALDOB
ALDOC