



### Supplementary information, Fig. S7. Correlation between famsin and diabetes.

**a-b** Relative *Gm11437* mRNA levels (**a**) and relative *Olfr796* mRNA levels (**b**) in 8-10-week-old lean, *db/db* and *ob/ob* male mice with *ad lib* feeding. Data are shown as mean ± s.e.m. Comparison of different groups was carried out using one-way ANOVA followed by Tukey's test. *NS*, no statistical significance. *n* = 6 mice. **c-d** Relative *Gm11437* mRNA levels (**c**) and relative *Olfr796* mRNA levels (**d**) in male mice fed a regular diet (RD) or high-fat diet (HFD) for 16 weeks with *ad lib* feeding. Data are shown as mean ± s.e.m. Comparison of different groups was carried out using unpaired two-tailed Student's *t*-test. *NS*, no statistical significance. *n* = 6 mice. **e** Blood glucose levels in normal people or patients with type 2 diabetes after overnight fasting. Data are shown as mean ± s.e.m. Comparison of different groups was carried out using unpaired two-tailed Student's *t*-test. \*\*\**p* < 0.001. *n* = 15 humans. **f-g** Body mass index (BMI, **f**) and age (**g**) of normal people and diabetic patients involved in this study. Data are shown as mean ± s.e.m. Comparison of different groups was carried out using unpaired two-tailed Student's *t*-test. \*\**p* < 0.01. *NS*, no statistical significance. *n* = 15 humans. **h** Effect of different doses of anti-Famsin antibody on famsin-induced *G6pc* mRNA levels in mouse primary hepatocytes. Data are shown as mean ± s.e.m. *n* = 6. **i-l** Effect of anti-Famsin antibody (200 μg kg<sup>-1</sup>) on body weight (**i**), insulin levels (**j**), alanine aminotransferase (ALT, **k**) and aspartate aminotransferase (AST, **l**) in *Olfr796*<sup>+/+</sup> and *Olfr796*<sup>-/-</sup> male mice fed a HFD for 16 weeks. Data are shown as mean ± s.e.m. Comparison of different groups was carried out using two-way ANOVA followed by Tukey's test (**i-k**) or unpaired two-tailed Student's *t*-test (**l**). \**p* < 0.05, \*\**p* < 0.01. *NS*, no statistical significance. *n* = 8 mice.