



### Supplementary Fig. S1.

Verification of overexpression by AAV-based vectors. **a** mRNA expression level of *Npgl* in the mediobasal hypothalamus at the end of *Npgl* overexpression. Each value represents the mean  $\pm$  standard error of the mean ( $n = 8$ ).  $***P < 0.005$  vs. AAV-CTL (NC),  $†††P < 0.005$  vs. AAV-CTL (HCD). **b** Western blot analysis of NPGL in the hypothalamus. Synthetic mouse NPGL served as a positive control (PC). The extract of the hypothalamus from six animals was separated via HPLC, and the fraction was electrophoresed on 15% polyacrylamide gel. A single band of mature NPGL was only detected in the hypothalamic extract at 18 days after the injection of AAV-NPGL. **c** Representative micrograph of the mediobasal hypothalamus at 4 weeks after injection of AAV-CTL or AAV-NPGL. Scale bars = 100  $\mu\text{m}$ . NPGL, neurosecretory protein GL; AAV-CTL, AAV-based control vector; AAV-NPGL, AAV-based NPGL-precursor gene vector; NC, normal chow; HCD, high-calorie diet.