

**Supplemental Figure 1.** Comparison between the effects of different icv doses of CNTF<sub>Ax15</sub> and leptin (10 µg in 2 µl saline) on 24-h food intake (*A*) and body weight change (*B*) in rats maintained on chow. Mean ± SEM of 5 to 9 rats used for each treatment group. \**p* < 0.05, \*\**p* < 0.005, and \*\*\**p* < 0.001 vs. appropriate vehicle. (*C*) icv CNTF<sub>Ax15</sub> (1.5 µg in 2 µl) increases hypothalamic mTORC1 signaling in rats consuming standard chow: representative Western blot from PBS- or CNTF<sub>Ax15</sub>-treated rats. Six to 7 brains were examined in each condition. β-actin, loading control. (*D*) Quantification by image analysis of hypothalamic STAT3, S6K1 and S6 phosphorylation. Error bars indicate SEM. \*\*\**p* < 0.001 vs. PBS condition.

**Supplemental Figure 2.** Icv leptin comparably induces hypothalamic STAT3 phosphorylation during exposure to a HF and LF diet. (*A*) Representative Western blot from LF/leptin-treated (5) or HF/ leptin-treated (7) rats. β-actin, loading control. (*B*) Quantification by image analysis of hypothalamic STAT3 phosphorylation. Error bars indicate SEM.