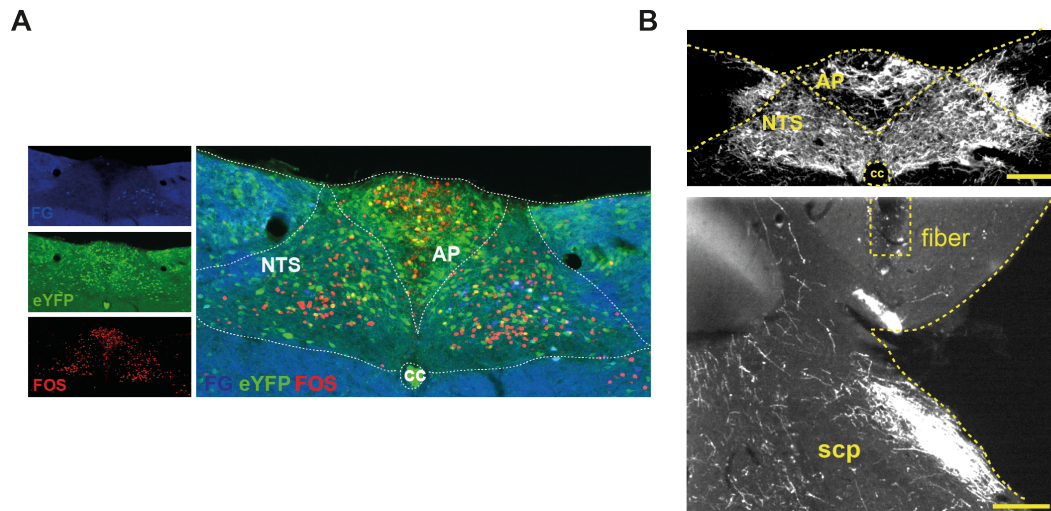


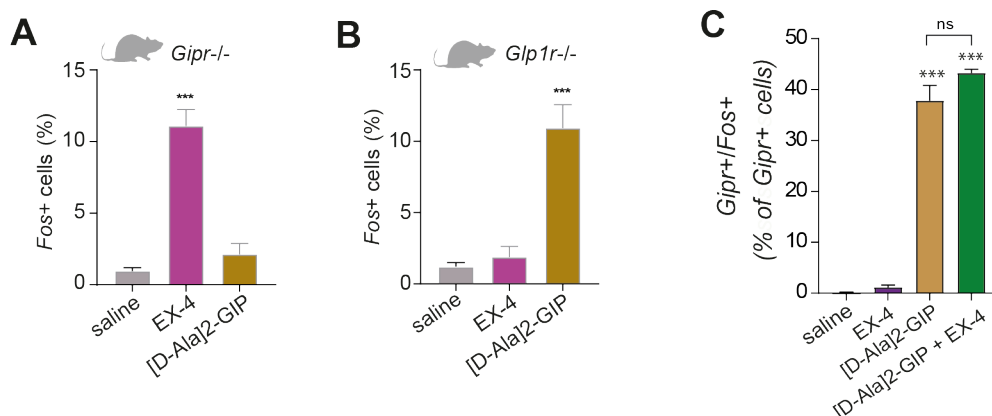
**Supplemental Figure 1.** (A) Body weight in CCK<sup>AP/NTS</sup>-eGFP and CCK<sup>AP/NTS</sup>-TeLC-eGFP mice before and following a targeted injection of AAV-eGFP or AAV-TeLC-eGFP in the AP/NTS via stereotaxic. (B-E) Representative recordings over 24 hours of (C) food intake, (D) energy expenditure, (E) locomotor activity, and (F) water intake ( $F_{(1,14)} = 11.80$ ,  $p = 0.0040$ ) in CCK<sup>AP/NTS</sup>-eGFP and CCK<sup>AP/NTS</sup>-TeLC-eGFP mice. Data are presented as mean  $\pm$  SEM. See also Main Figure 2.

Supplemental Figure 2



**Supplemental Figure 2.** (A) Representative image of  $CCK^{AP/NTS}$  neurons projecting ( $\rightarrow$ ) to the paraventricular nucleus of the hypothalamus (PVH) identified using Fluoro-Gold (FG) retrograde tracing. (B) Top panel: representative images of  $CCK^{AP/NTS}$  neurons expressing ChR2-eYFP. Bottom panel: eYFP+  $CCK^{AP/NTS}$  neuronal projections in the Parabrachial nucleus (PBN) and location of the optic fiber placement. AP, Area Postrema; NTS, nucleus of the solitary tract; scp, superior cerebellar peduncle. See Main Figure 3.

## Supplemental Figure 3



**Supplemental Figure 3.** (A) Quantification of *Fos* mRNA expressing cells in the AP following EX-4 (30 kg<sup>-1</sup>, IP) and [D-Ala2]-GIP (100µg kg<sup>-1</sup>, IP) in knock-out mice lacking the *Gipr*. (B) Quantification of *Fos* mRNA expressing cells in the AP following EX-4 (30 kg<sup>-1</sup>, IP) and [D-Ala2]-GIP (100µg kg<sup>-1</sup>, IP) in knock-out mice lacking the *Glp1r*. (C) Quantification of *Glp1r* mRNA expressing cells co-expressing *Fos* mRNA in the mouse AP following EX-4 (30 kg<sup>-1</sup>, IP) and [D-Ala2]-GIP (100µg kg<sup>-1</sup>, IP) alone or in combination. One way ANOVA followed by Tukey's group comparison was performed for all panels, \*\*\*p<0.001 compared to saline group, ns, not significant. Data are presented as mean ± SEM. See also Main Figure 4.