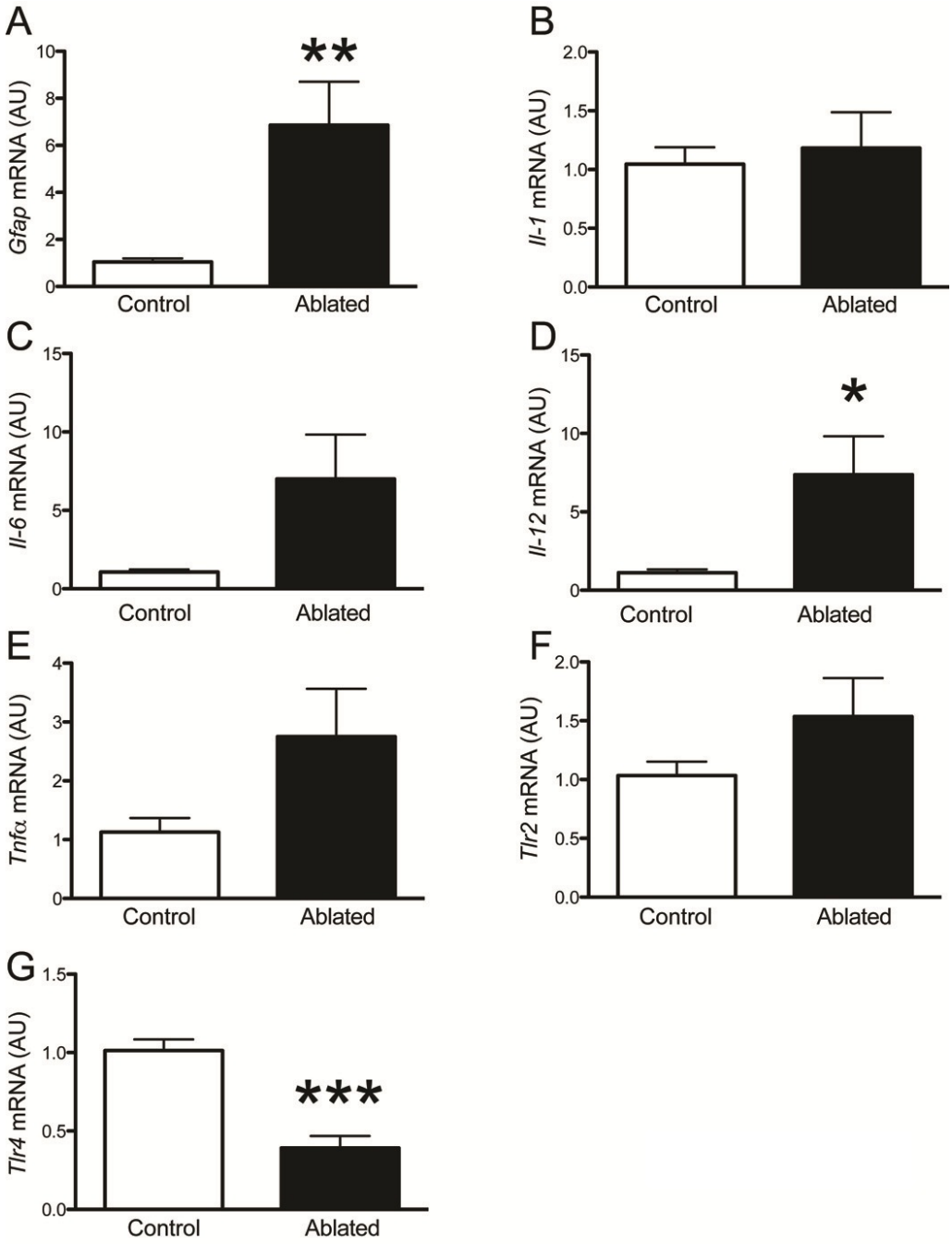
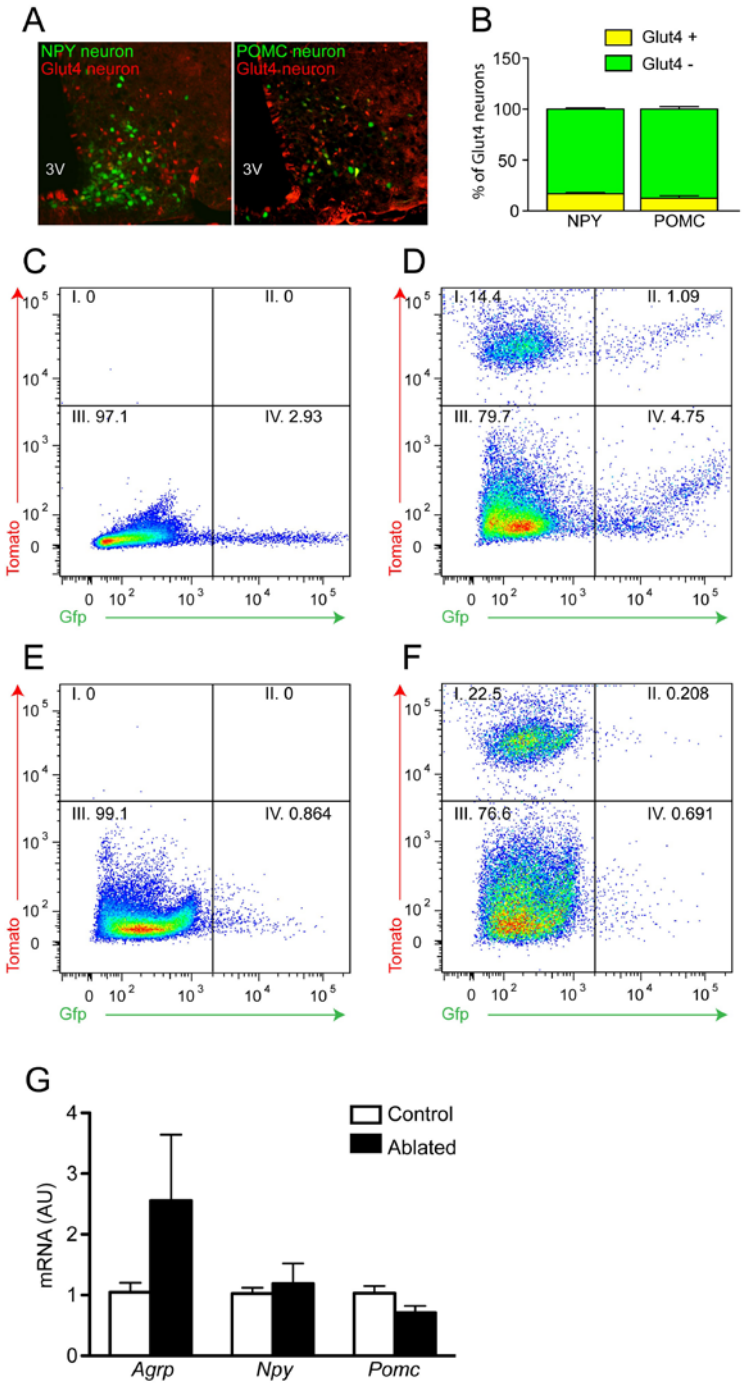
SUPPLEMENTARY DATA

Supplementary Figure 1. Inflammatory markers after acute Glut4 neuron ablation
Hypothalamic *Gfap* expression (A) normalized to *βActin*. Hypothalamic *Il-1, Il-6, Il-12, Tnfα, Tlr2, Tlr4* expression (B-G) normalized to *Gfap.* AU, arbitrary unit. Data show means ± SEM (n=6-8 per group) (*= $P<0.05$; **= $P<0.01$, ***= $P<0.001$).



SUPPLEMENTARY DATA

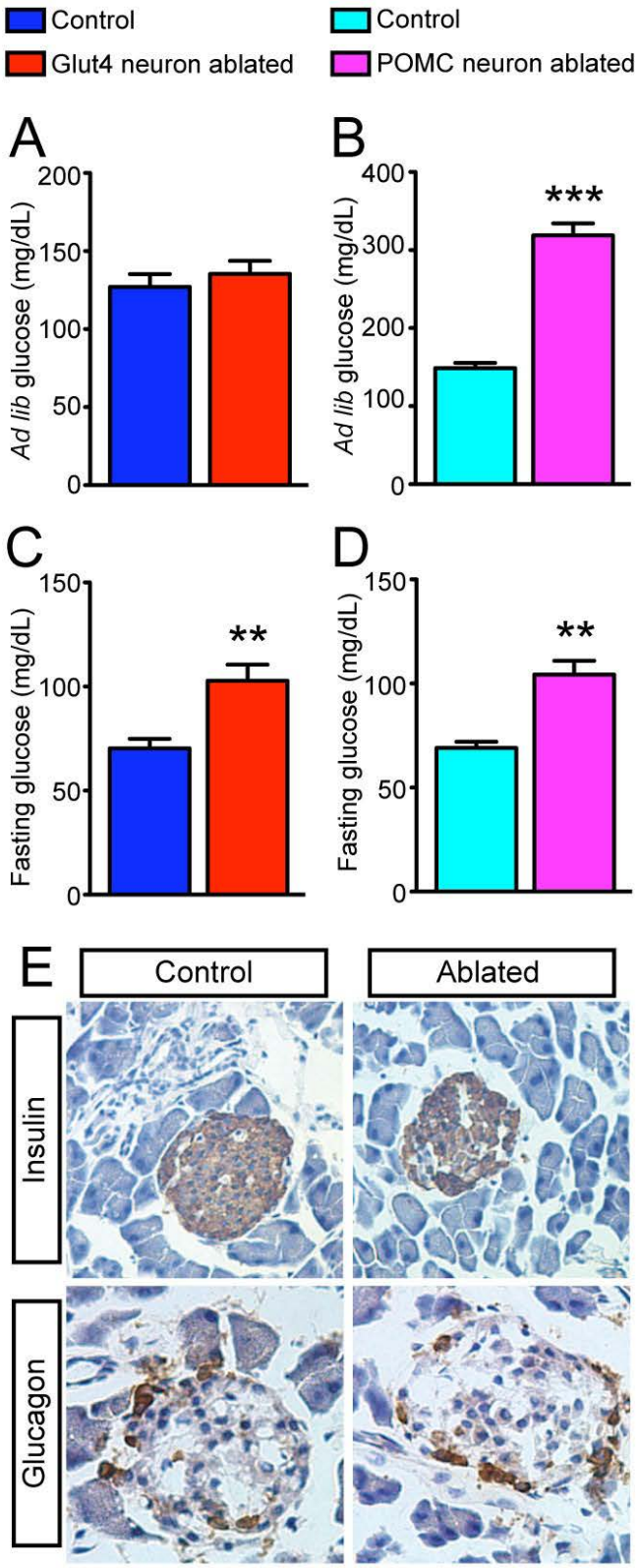
Supplementary Figure 2. Overlap between Glut4 neurons, POMC neurons, and NPY neurons
(A) Detection of Glut4, NPY, and POMC neurons in the arcuate nucleus of adult mice using fluorescent reporter transgenes. NPY neurons (left panel) and POMC neurons (right panel) are labeled green with *Npy-Gfp* and *Pomc-Gfp*, respectively. Glut4 neurons are labeled red with *Glut4-Cre; Rosa-tomato*. 3V= third cerebral ventricle. (B) Quantification of the percentage of Glut4-positive NPY or POMC neurons by flow cytometry (n= 3-4 per group). (C-F) Representative flow cytometry results from *Npy-Gfp* (C), *Npy-Gfp;Glut4-Cre;Rosa-tomato* (D), *Pomc-Gfp* (E), or *Pomc-Gfp;Glut4-Cre;Rosa-tomato* mice (F). The percentage of Gfp and/or Tomato positive cells in each quadrant is indicated in the graph. (G) Neuropeptide mRNA expression. Data show means ± SEM (n=6 per group) (*= $p<0.05$).



SUPPLEMENTARY DATA

Supplementary Figure 3. Glucose levels in mice 2 months after Glut4 neuron or POMC neuron ablation

(A-B) Ad libitum-fed glucose levels. (C-D) Fasting glucose levels. (E) Insulin and glucagon immunohistochemistry. Data show means ± SEM (n=6-8 per group) (**= p<0.01, ***= p<0.001).



SUPPLEMENTARY DATA

Supplementary Figure 4. Akt activation in the CNS after acute Glut4 neuron ablation
(A-B) Western blot analysis of Akt phosphorylation in the hypothalamus of control and Glut4-neuron-ablated mice after fasting (A) and refeeding (B). Quantified data are shown on the right. (C) Immunohistochemical analysis of pAkt and Gfap in the hypothalamus of control and Glut4-neuron-ablated mice 4-hr after refeeding.