Expanded View Figures

**Figure EV1.** Experimental procedures.
A Experimental procedure and protocol for fasting–refeeding experiments.
B Experimental procedure and protocol for pancreatic clamp experiments using chemical approaches.

**Figure EV2.** DVC glucagon activates glucagon receptors to suppress GP independent of changes in glucose uptake.
A, B Glucose production expressed as per cent suppression from basal (A) and glucose uptake during pancreatic clamp experiments (B) with DVC infusions of saline (Sal; n = 5), glucagon (Gcg; n = 6), glucagon-specific monoclonal antibody (mAb; n = 5), gcg plus mAb (n = 5), glucagon receptor antagonist (GRA; n = 5) or gcg plus GRA (n = 6). Values are shown as mean + SEM. ***P < 0.001 compared to all other groups as determined by ANOVA and Tukey's post hoc test.
Figure EV3. DVC glucagon activates PKA to suppress GP independent of changes in glucose uptake.

A, B Glucose production expressed as per cent suppression from basal (A) and glucose uptake during pancreatic clamp experiments (B) with DVC infusions of sal (n = 5), gcg (n = 7), Rp-cAMPS (n = 5) or gcg plus Rp-cAMPS (n = 5). Values are shown as mean + SEM. *P < 0.05 compared to all other groups as determined by ANOVA and Tukey’s post hoc test.

Figure EV4. DVC glucagon activates Erk1/2 and K_{ATP} channels to suppress GP independent of changes in glucose uptake.

A, B Glucose production expressed as per cent suppression from basal (A) and glucose uptake during pancreatic clamp experiments (B) with DVC infusions of sal (n = 6), gcg (n = 7), PD98059 (PD; n = 5), gcg plus PD (n = 5), glibenclamide (glib; n = 5) or gcg + glib (n = 7) and viral injection of GFP (n = 5), gcg plus GFP (n = 5), MEK1-DN (n = 5) or gcg plus MEK1-DN (n = 5). Values are shown as mean + SEM. *P < 0.05 and **P < 0.01 compared to all other groups as determined by ANOVA and Tukey’s post hoc test.
Figure EV5. Inhibition of DVC glucagon action does not affect plasma glucose levels during low-protein, low-carbohydrate feeding.

A, B  Plasma glucose concentrations (A) and cumulative food intake during fasting-refeeding experiments (B) in low-protein/low-carbohydrate/high-fat diet plus DVC saline infusion (LP/LC/HF saline; n = 5) and low-protein/low-carbohydrate/high-fat diet plus DVC GRA infusion (LP/LC/HF GRA; n = 5) groups. Values are shown as mean ± SEM.