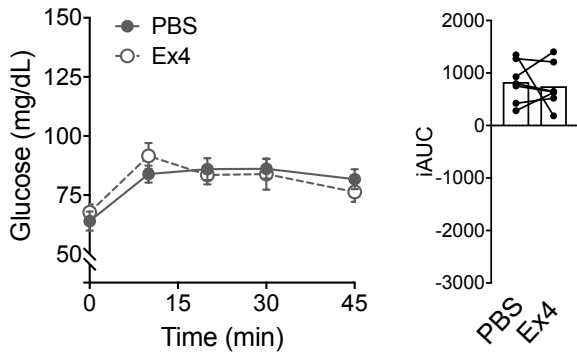
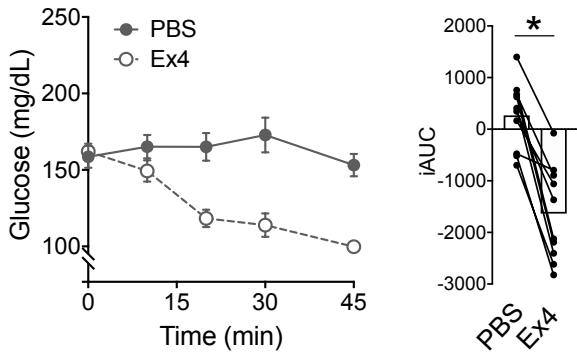


Supplementary Figure 1

A

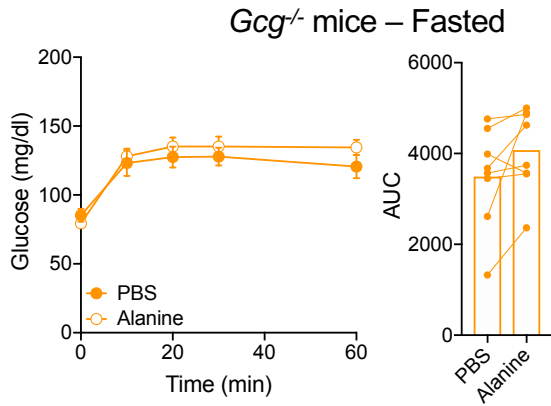


B



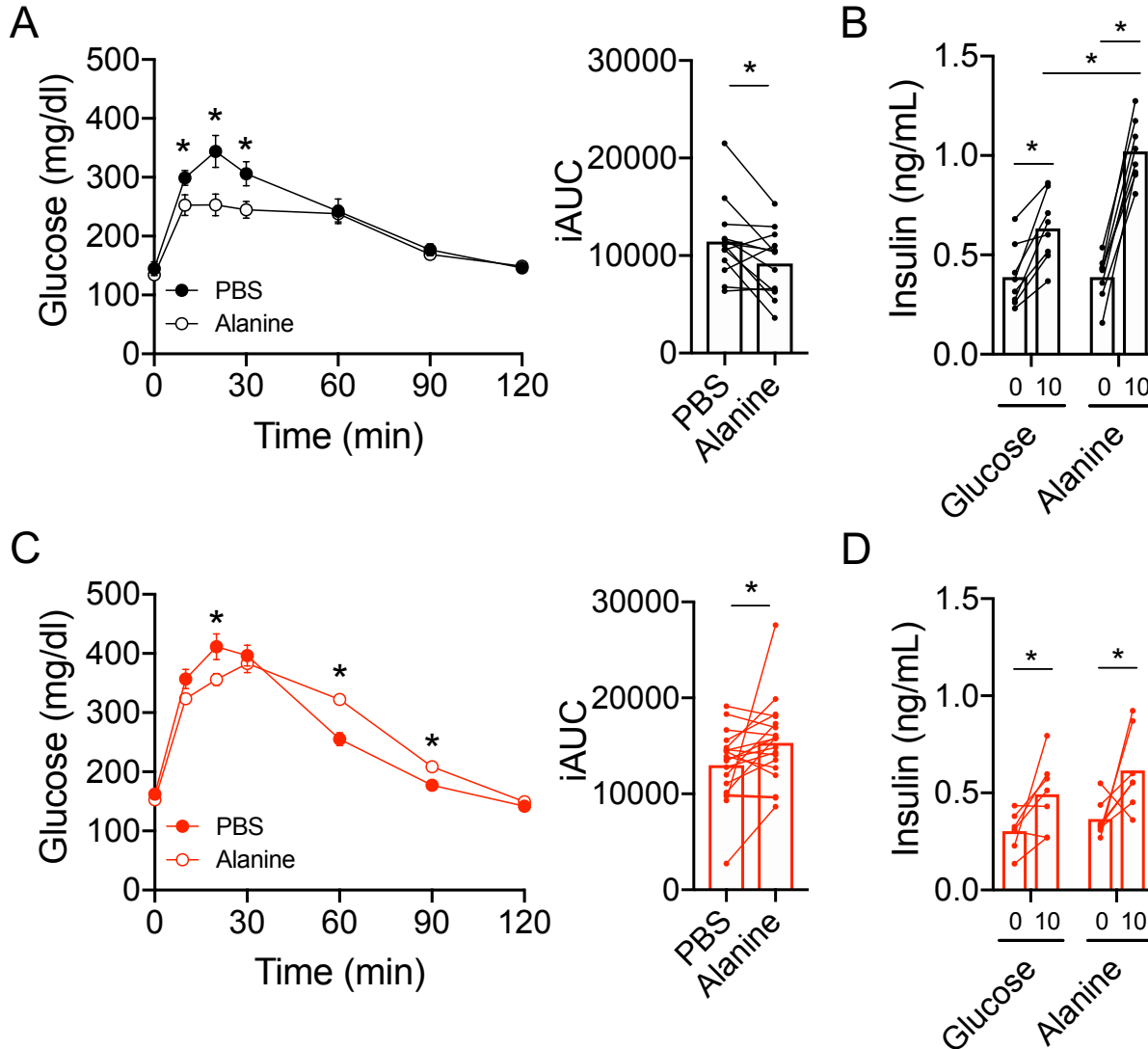
The effects of Ex4 depend on the starting glycemic level. A) WT mice fasted overnight did not have a glycemic response to Ex4 (0.3 nmol/kg). B) Fed WT mice given Ex4 responded with a decline in glycemia. * - $p < 0.05$ vs PBS control, values are mean \pm SEM.

Supplementary Figure 2



The glycemic effects of exogenous alanine in *Gcg*^{-/-} mice. Alanine given intraperitoneally to fasted *Gcg*^{-/-} mice did not alter glycemia compared to PBS control. Values are mean \pm SEM.

Supplementary Figure 3



Exogenous alanine stimulates insulin secretion in WT mice. A) WT mice given alanine along with glucose (1.5 g/kg) intraperitoneally reduces glycemia and B) stimulates insulin secretion more than glucose alone. C) Alanine + glucose in *Gcgr:Glp1 β cell^{-/-}* mice leads to a higher glucose AUC and D) fails to stimulate insulin secretion beyond glucose alone. * - $p < 0.05$ vs PBS control, values are mean \pm SEM.