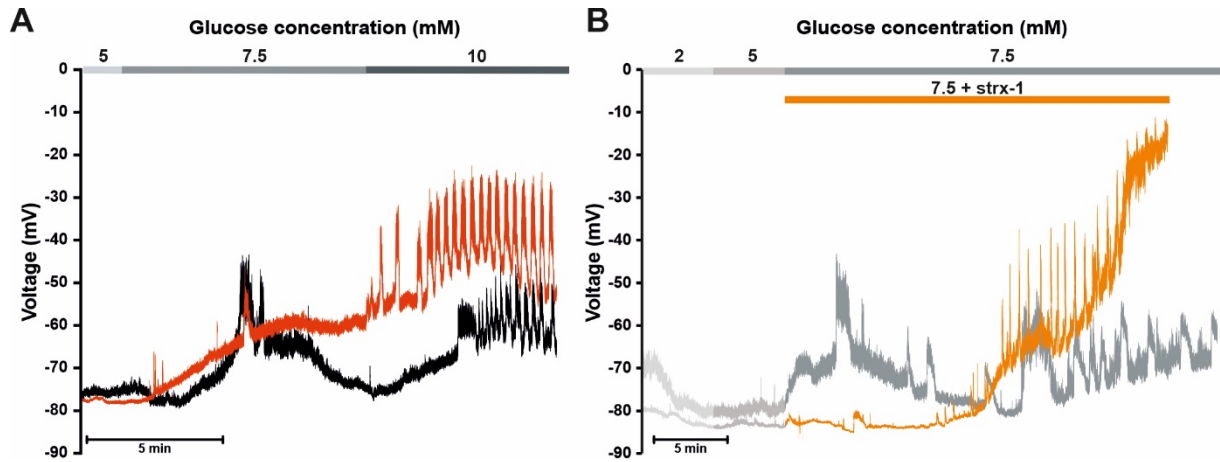


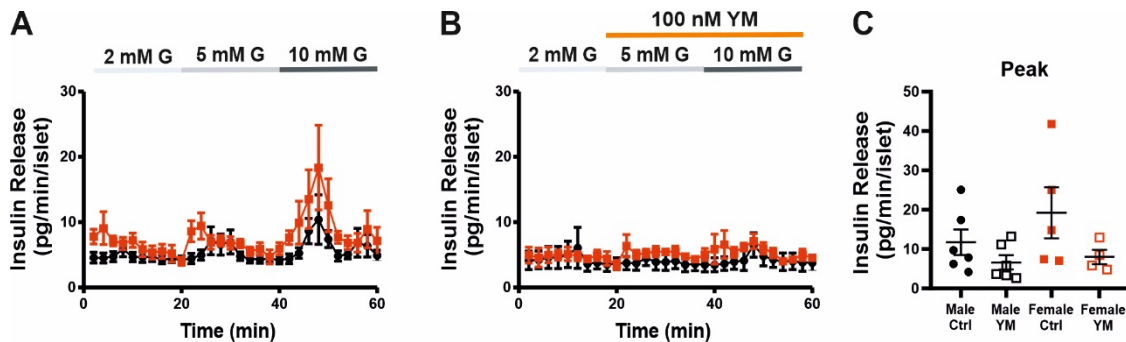
# **Molecular mechanism responsible for sex differences in electrical activity of mouse pancreatic $\beta$ -cells**

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## **Supplementary Figures**



**Figure S1. Sample traces of glucose-induced electrical activity.** **A.** Increasing extracellular glucose concentration induces a steady membrane depolarization in female (red) but not male (black)  $\beta$ -cells. Note that male  $\beta$ -cell MP remains at a hyperpolarized value even in the presence of 10 mM extracellular glucose. **B.** Sample traces of the glucose induced electrical activity in male  $\beta$ -cells from intact islets stimulated with 2, 5 and 7.5 mM glucose without stromatoxin-1 (grey) and in presence of stromatoxin-1 (orange).



**Figure S2. Inhibition of Gq pathway alone equally reduces glucose-induced insulin secretion in male and female islets.** **(A)** Dynamic insulin release from male (n=6) and female (n=5) islets (20 islets/experiment) in 2, 5 and 10 mM glucose. **(B)** Dynamic insulin release from male (n=6) and female (n=4) islets in 2, 5 and 10 mM glucose plus 100 nM of the Gq inhibitor, YM-254890. **(C)** Maximum insulin release values for the experiments presented in panels A and B (Peak male: Ctrl:  $11.73 \pm 3.24$ , YM:  $6.61 \pm 1.823$   $P=0.1994$ ; Peak female: Ctrl:  $19.22 \pm 6.51$ , YM:  $8.01 \pm 1.81$ ,  $P=0.19$ ). All values are means  $\pm$  SEM. Statistics with Mann-Whitney test.