LRRC8 channel complexes counterbalance K_{ATP} channels to mediate swell-secretion coupling in mouse pancreatic β-cells

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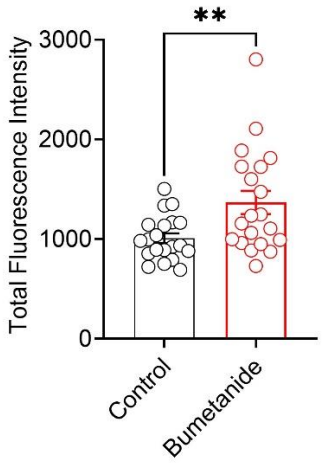
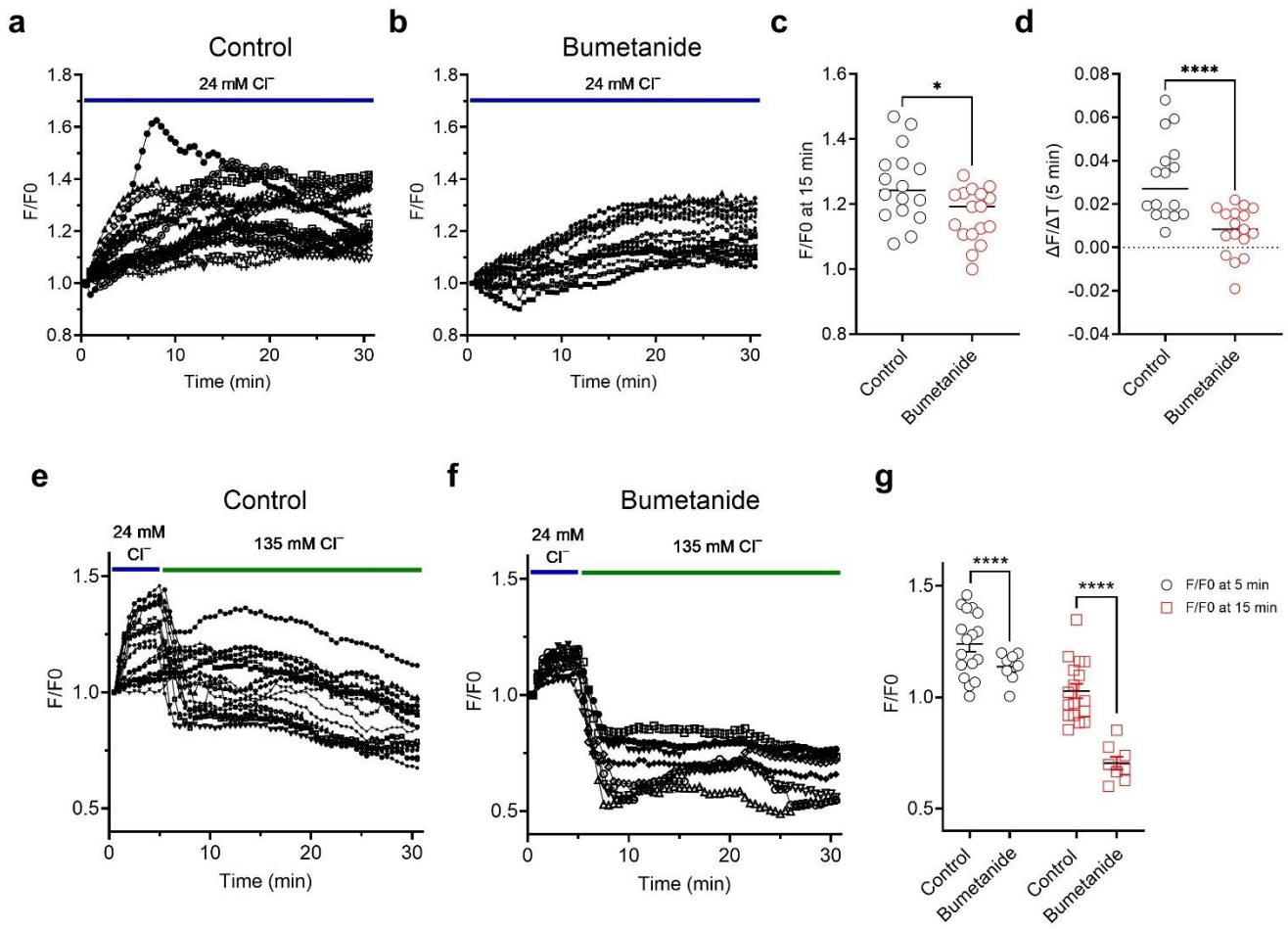


Supplementary Figure 1. Bumetanide treatment reduces intracellular Cl^- concentration in β-cells. Total MQAE fluorescence intensity in β-cells under control conditions (n = 20) and after treatment with 20 μM bumetanide (n = 20). Data are presented as mean ± S.E.M. Statistical significance for all data was determined using two-tailed unpaired Student's t-test (**P < 0.01).



Supplementary Figure 2. Bumetanide pre-treatment lowers β-cell intracellular Cl^- as compared to control thereby reducing Cl^- efflux and increasing Cl^- influx. a,b Normalized MQAE fluorescence in control (n = 16) and bumetanide-treated β-cells (n = 17) during perfusion with a low-Cl^- solution (24 mM). **c** Mean normalized MQAE fluorescence in control and bumetanide-treated β-cells after 15 minutes of perfusion with a low-Cl^- solution (24 mM). **d** Rate of change of MQAE fluorescence (ΔF/ΔT) over 5 minutes in control and bumetanide-treated β-cells upon perfusion with a low-Cl^- (24 mM) solution. **e,f** Normalized fluorescence intensity during the transition from media to a low-Cl^- solution (24 mM), and then to high-Cl^- solution (135 mM) in control (n = 17) versus bumetanide-treated β-cells (n = 8). **g** Mean normalized MQAE fluorescence in control and bumetanide-treated β-cells after 5 minutes of perfusion with a low-Cl^- solution (24 mM) and 15 minutes of perfusion with a high-Cl^- solution (135 mM). Statistical significance for all data was determined using two-tailed unpaired Student's t-test (*P < 0.05; ****P <0.0001).