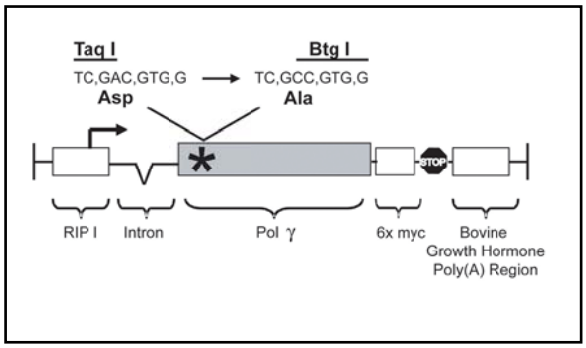
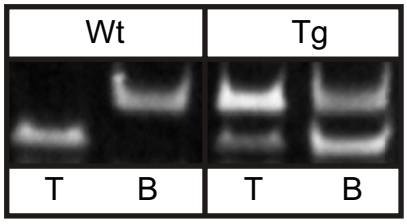
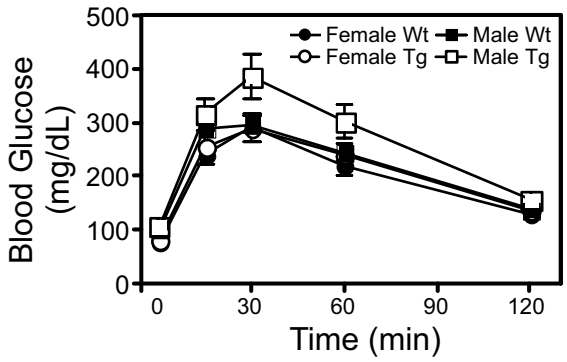
**A.**



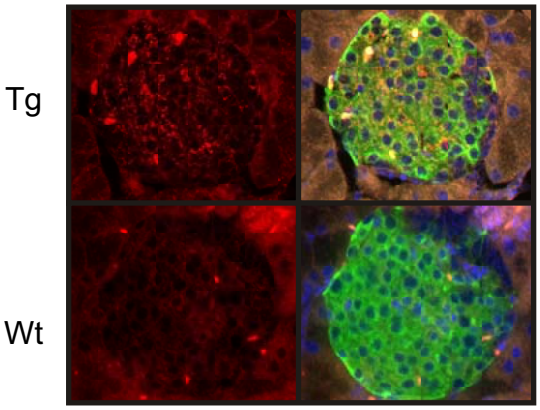

**B.**




**C.** RIP1-pol$\gamma^{Exo(-)}$-myc-C




**D.**




**Supplementary Figure 1.** *Confirmation of the phenotype in RIP1-Pol$\gamma^{Exo(-)}$-myc B-D lines.* (**a**) Schematic representation of a second myc-epitope tagged construct that was used to generate additional transgenic lines. (**b**) Total RNA from islets isolated from WT and Tg mice was amplified by RT-PCR and digested with either TaqI (T) or BtgI (B) to determine relative expression levels of endogenous (TaqI digested) and transgenic (BtgI digested) forms of Polγ. Transgenic mice from all three lines express both endogenous Polγ and the transgene in isolated islets (line D shown) in contrast to the original founder line, which only expresses the transgene (cf. Fig. 1C). (**c**) To determine alterations in glucose homeostasis, oral glucose tolerance tests were performed on RIP1-Pol$\gamma^{Exo(-)}$-myc B-D WT and Tg mice at 6 weeks of age. Lines B and D display a mild impairment in glucose tolerance (not shown). In RIP1-Pol$\gamma^{Exo(-)}$-myc-C glucose tolerance in males is significantly impaired. (**d**) To evaluate expression and cellular localization of the transgene, pancreatic sections from nine-week-old male mice were stained with antibodies to myc (red) and insulin (green) (representative islet from a RIP1-Pol$\gamma^{Exo(-)}$-myc B line WT and Tg mice). Nearly all insulin-containing cells express the myc epitope-tag; however, the intensity of myc staining varied from cell to cell. Consistent with a mitochondrial distribution, myc staining is punctate and surrounds β-cell nuclei (**e**).