

# Supplemental Materials

*Molecular Biology of the Cell*

Khoriaty et al.

**Supplemental Figure 1.** Histologic evaluation of pancreas tissues 14 days following deletion of acinar *Sec23b*. The evaluation was performed by an investigator blinded to the genotypes of the mice from which the tissues were derived (3 mice of each genotype were evaluated). (A) Fourteen days following acinar *Sec23b* deletion, evaluation of pancreas tissues by hematoxylin and eosin stains demonstrated degeneration of acinar epithelial cells characterized by cellular shrinkage, cytoplasmic loss with loss of zymogen granules, and nuclear pyknosis (middle panel) compared to WT controls (left panel). Positive control for pancreatitis is shown in the right panel. (B) Immunohistochemistry for CD45 and (C) for F4/80 demonstrates a small number of white blood cells (mostly macrophages) infiltrating pancreas tissues of mice with acinar *Sec23b* deletion, compared to mice with cerulean-induced pancreatitis (positive control). The panels for the positive control are the same used in Figure 3.

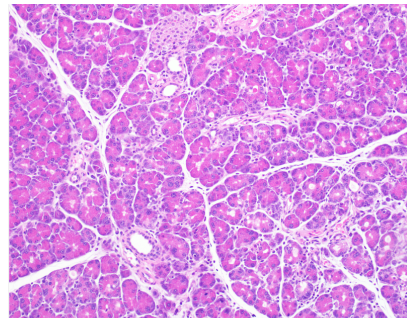
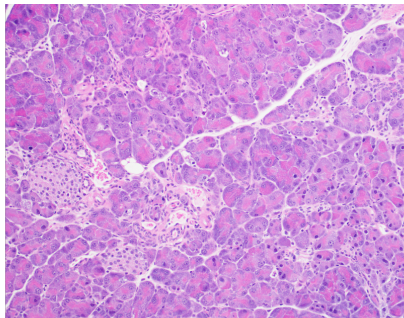
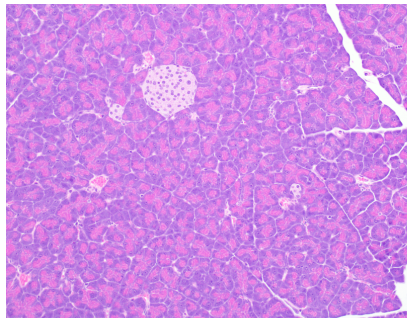
**Supplemental Figure 2.** Electron microscopy of pancreas tissues 14 days following deletion of acinar *Sec23b*. (A) Normal pancreatic acinar cells with central lumen (asterisk), adjacent zymogen granules (approximately 1  $\mu$ m diameter) and basal rough endoplasmic reticulum (RER). (B-D) Some acinar cells from *Sec23b* deleted pancreas exhibited normal morphology while others exhibited striking defects, including expanded RER cisternae, small granules which were predominantly intra-cisternal. (B) Acinar cell (left) with expanded RER cisternae, adjacent to more normal appearing acinar cells. (C) Acinar cells with expanded cisternae (top), adjacent to acinar cells with small granules (right) or normal sized granules (left). (D) Acinar cells with expanded cisternae and small granules. Inset: Small sized (220 nm diameter) intracisternal granules. Magnification bar = 400 nm. Three mice per each genotype were evaluated.

*Sec23b*<sup>+/+</sup>

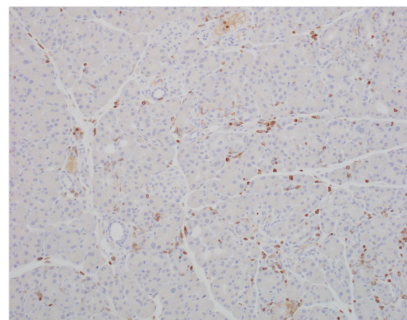
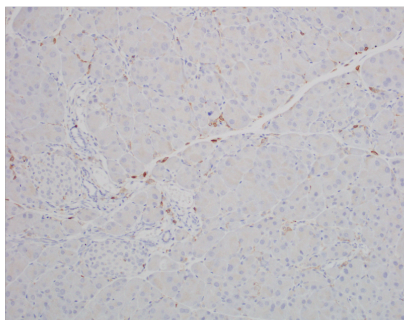
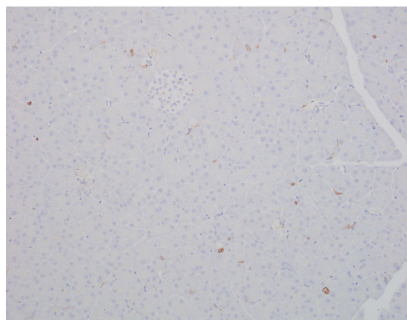
*Sec23b*<sup>-fl</sup> CreErT<sup>+</sup>

Pancreatitis positive control

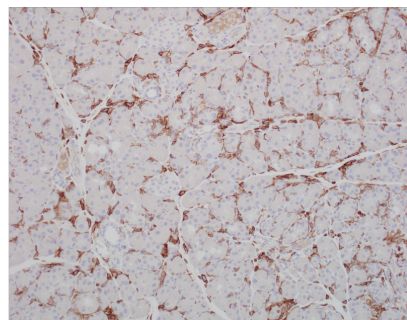
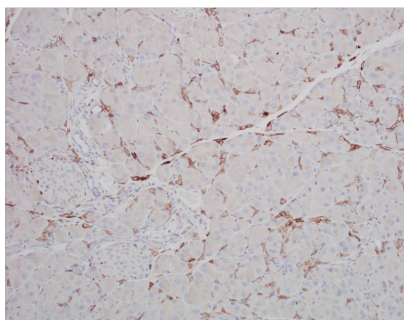
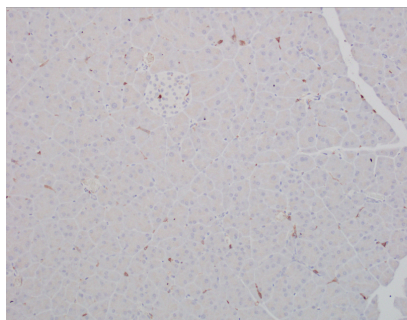
**A**  
H&E

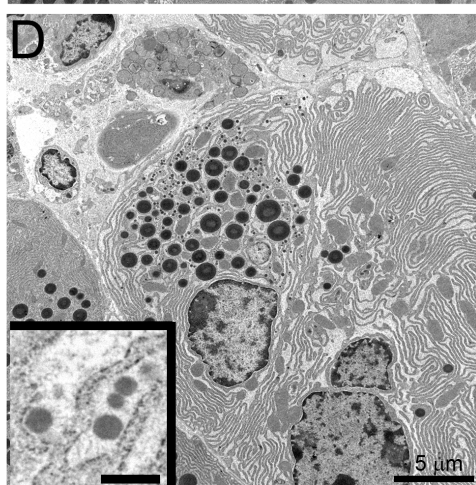
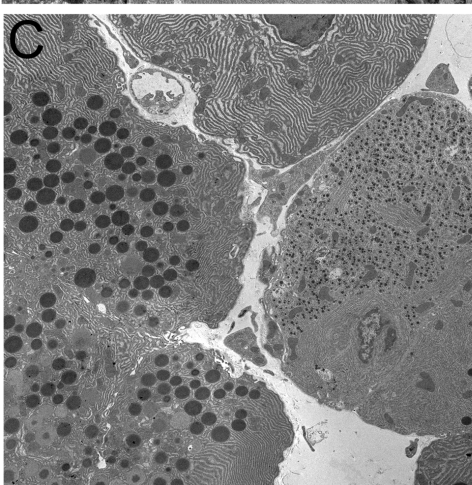
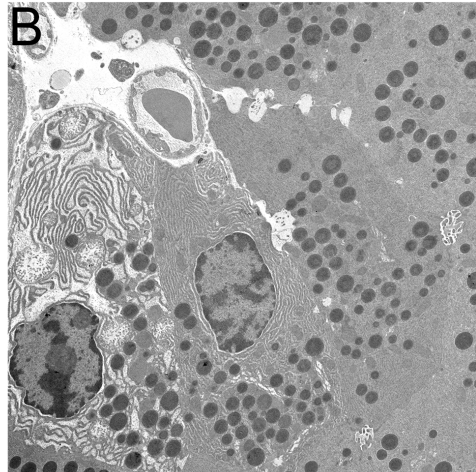
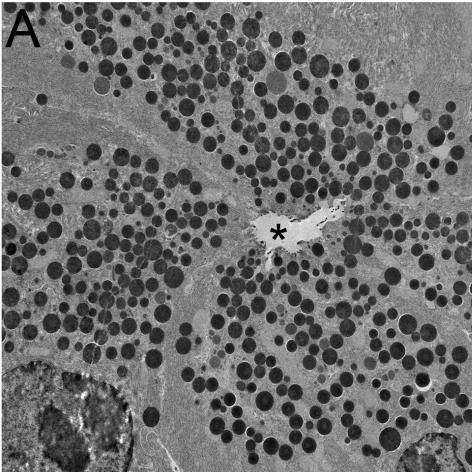


**B**  
CD45



**C**  
F4/80





Supplementary table1. Primer sequences

<b>Primer</b>	<b>Primer sequence (5' -&gt; 3')</b>
<i>Sec23b</i> F4	CGCGTCGAGAAGTTCCTATT
<i>Sec23b</i> R4	ATCAACCACTTTGTACAAGAAAGC
<i>Sec23a</i> F	ATTCAGCCCATTCTGTACGC
<i>Sec23a</i> R	AATCCGATCTGCAAGAATGC
<i>Gapdh</i> F	TGTGTCCGTCGTGGATCTGA
<i>Gapdh</i> R	ACCACCTTCTTGATGTCATCATACTT
<i>Xbp1</i> spliced F	GAGTCCGCAGCAGGTG
<i>Xbp1</i> spliced R	GTGTCAGAGTCCATGGGA
<i>Xbp1</i> total F	AAGAACACGCTTGGGAATGG
<i>Xbp1</i> total R	ACTCCCCTTGGCCTCCAC
<i>Chop</i> F	CTGCCTTTCACCTTGGAGAC
<i>Chop</i> R	CGTTTCCTGGGGATGAGATA
beta actin F	GATCTGGCACCACACCTTCT
beta actin R	GGGGTGTGAAGGTCTCAA
<i>Atf6a</i> F	CTTCCTCCAGTTGCTCCATC
<i>Atf6a</i> R	CAACTCCTCAGGAACGTGCT
<i>Grp78/Bip</i> F	CATGGTTCTCACTAAAATGAAAGG
<i>Grp78/Bip</i> R	GCTGGTACAGTAACAACCTG
<i>Edem1</i> F	GGGGCATGTTCTGCTTTCGG
<i>Edem1</i> R	CGGCAGTAGATGGGGTTGAG
<i>Atf4</i> F	ATGGCCGGCTATGGATGAT
<i>Atf4</i> R	CGAAGTCAAACCTTTTCAGATCCATT
<i>Gadd34</i> F	TTTTGGCAACCAGAACCG
<i>Gadd34</i> R	GGAGATAGAAGTTGTGGGCG
<i>Grp94</i> F	TCGTCAGAGCTGATGATGAAGT
<i>Grp94</i> R	CGTTTTAACCCATCCAACCTGAAT
<i>Eif2a</i> F	CACCGCTGTTGACAGTCAGAG
<i>Eif2a</i> R	GCAAACAATGTCCCATCCTTACT
<i>Trib3</i> F	GCAAAGCGGCTGATGTCTG
<i>Trib3</i> R	AGAGTCGTGGAATGGGTATCTG