Beta-cell regeneration from vimentin^{+}/MafB^{+} cells after STZ-induced extreme beta-cell ablation

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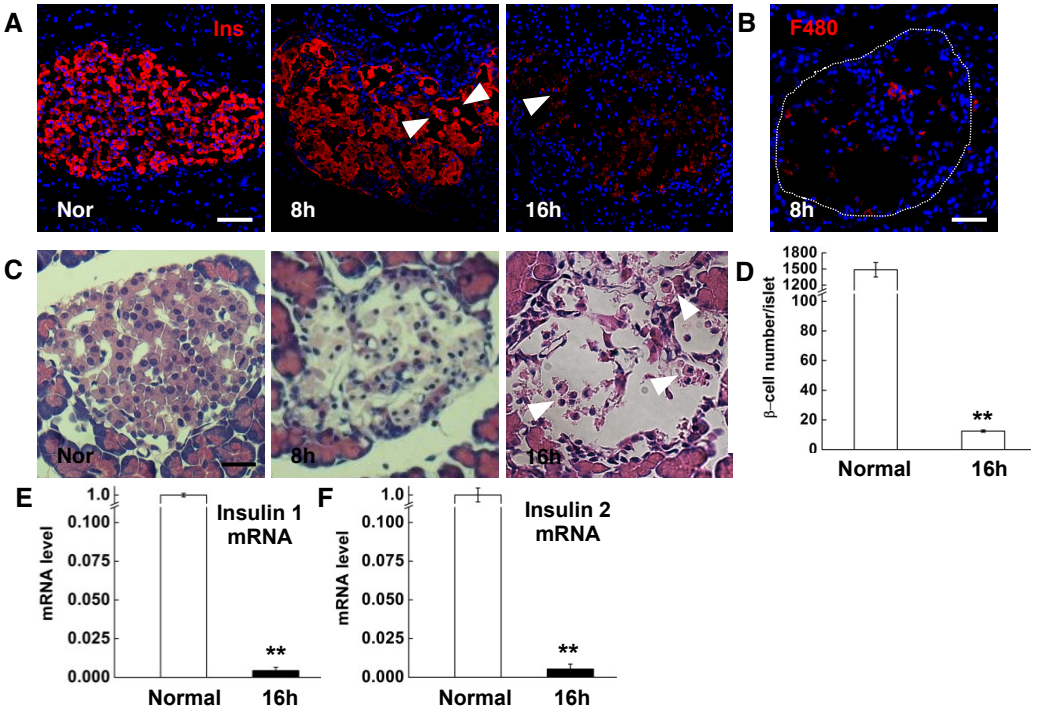

Figure S1. A single high dose STZ induced acute and extreme beta-cell injury. (A) Representative islets stained with insulin (red) of normal control SD rats (Nor), and STZ-treated rats at indicated time points (8h, 16h). Nuclei were labeled with DAPI. Scale bars, 50μm. The isosceles triangle: remaining insulin stained cells. (B) Representative islets stained with F480 (red) of STZ-treated rats (8h). Scale bars, 50μm. (C) Representative islets from rat pancreas sections (4μm). The sections were performed with hematoxylin and eosin staining. The isosceles triangle: a group of round-shaped cells. Scale bars, 20μm. (D) Quantification of b-cell number. (E, F) Ins1 and Ins2 gene expression in isolated islets of normal control and STZ-treated rats (16h). Data are shown as means ± SEM, n=5-6 rats per group. *P < 0.05 and **P < 0.01.

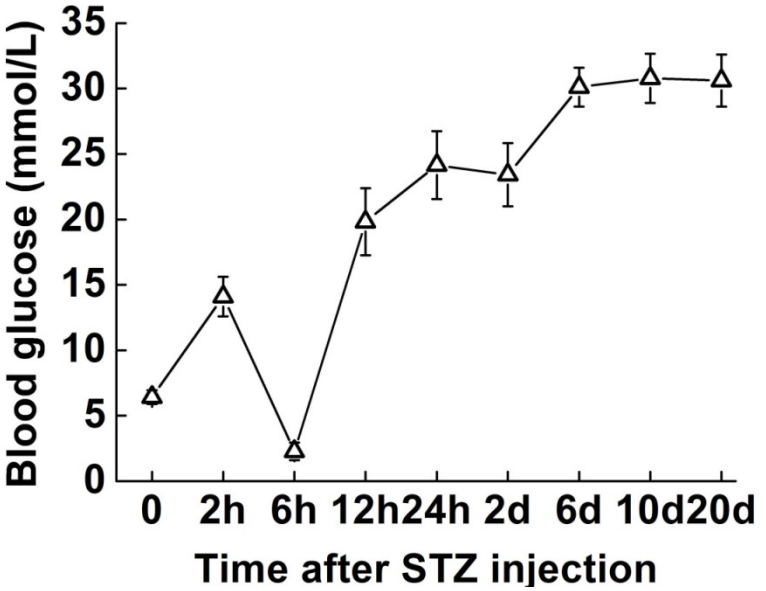

Figure S2. Random blood glucose levels post STZ injection. Data are shown as means ± SEM, n=10 rats.

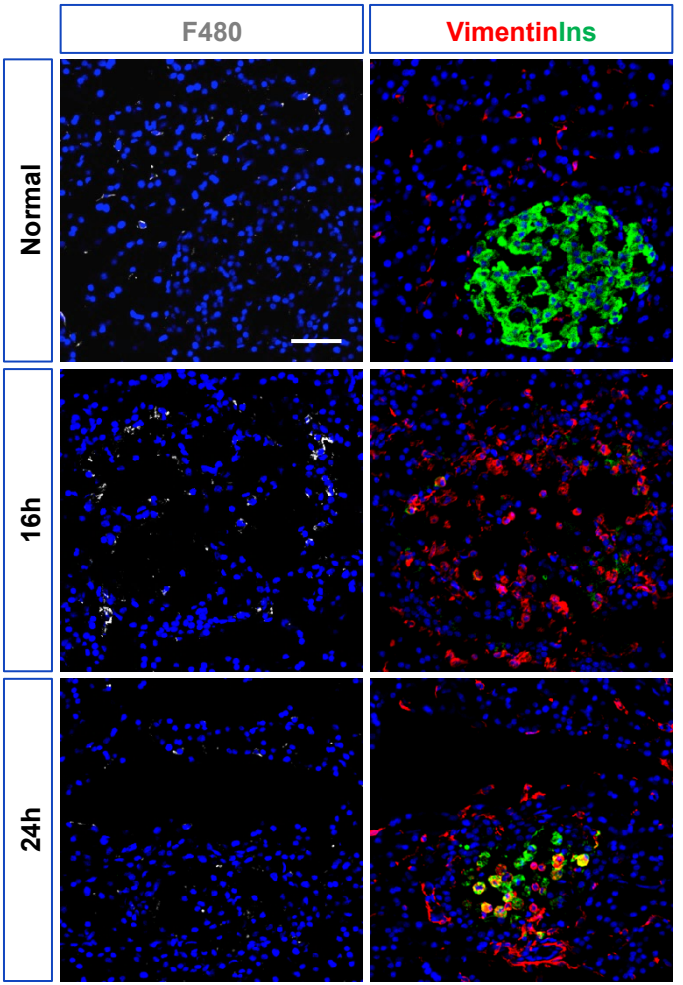

Figure S3. The round-shaped vimentin^{+} cells did not express macrophage marker F480. The photomicrographs in the left column showed representative islets stained with anti-F480 (gray), and the right column with anti-vimentin (red) and anti-insulin (green) antibodies of the consecutive slides from normal control SD rats (Nor), and STZ-treated rats at different time points (16 h, 24 h). Nuclei were labeled with DAPI. Scale bars, 50μm.

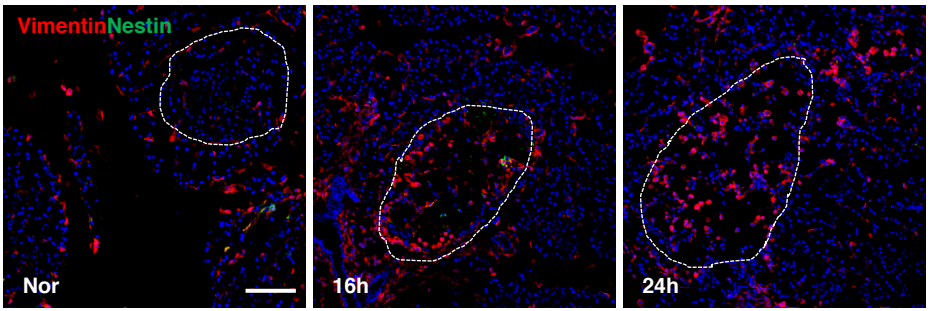

Figure S4. Very limited recruitment of nestin-positive cells to damaged islets. The photomicrographs stained with anti-vimentin (red) and anti-nestin (green) antibodies from normal control SD rats (Nor), and STZ-treated rats at different time points (16 h, 24 h). Nuclei were labeled with DAPI. Scale bars, 100μm.

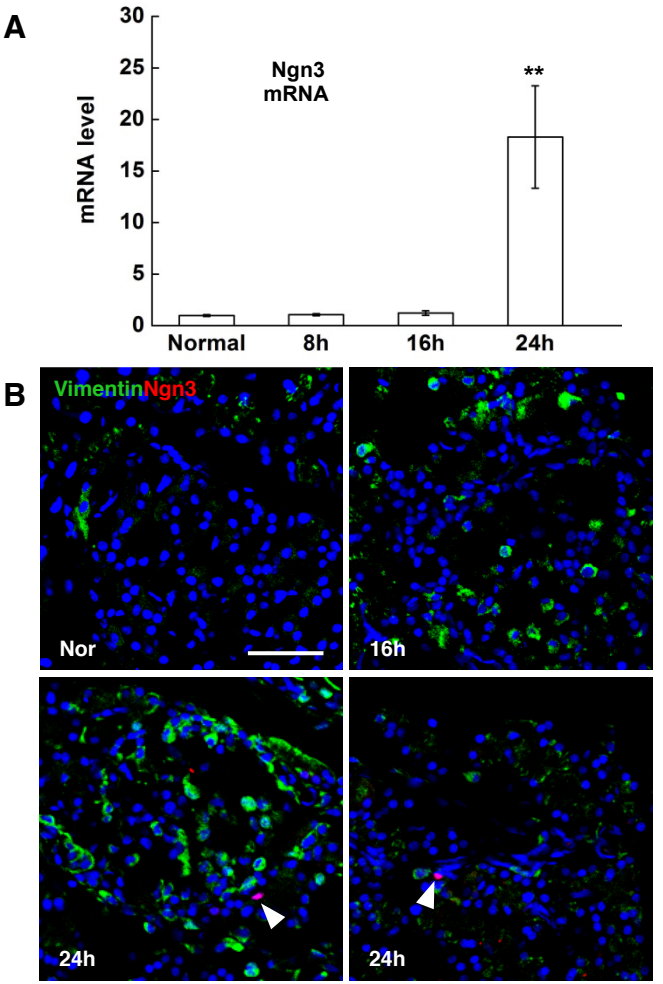

Figure S5. Massive beta-cell loss induced limited Ngn3 activation. (A) Expression of Ngn3 gene in pancreas of normal control and STZ-treated rats at indicated time points (8 h, 16 h, and 24 h). (B) Photomicrographs double stained with anti-vimentin (green) and anti-Ngn3 (red) antibodies of normal control and STZ-treated rats (16 h, 24 h). Nuclei were labeled with DAPI. Scale bars, 50μm. The isosceles triangle: $Ngn3^{+}$ cells. Data are shown as means ± SEM, n=3 per group; *$P < 0.05$ and **$P < 0.01$.