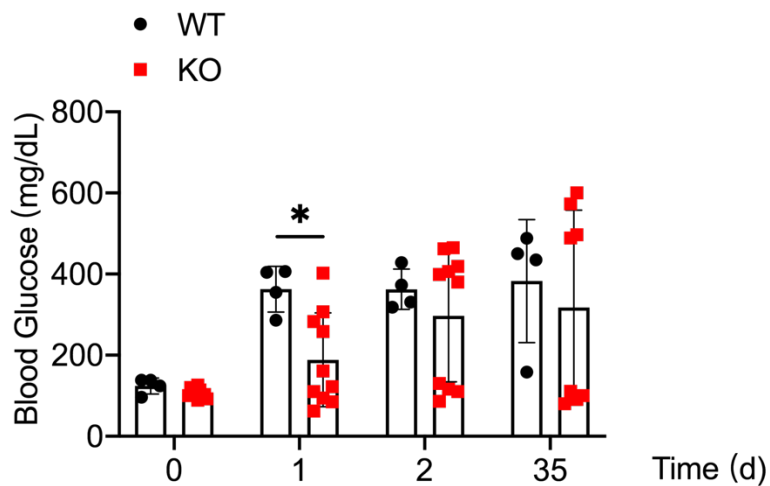
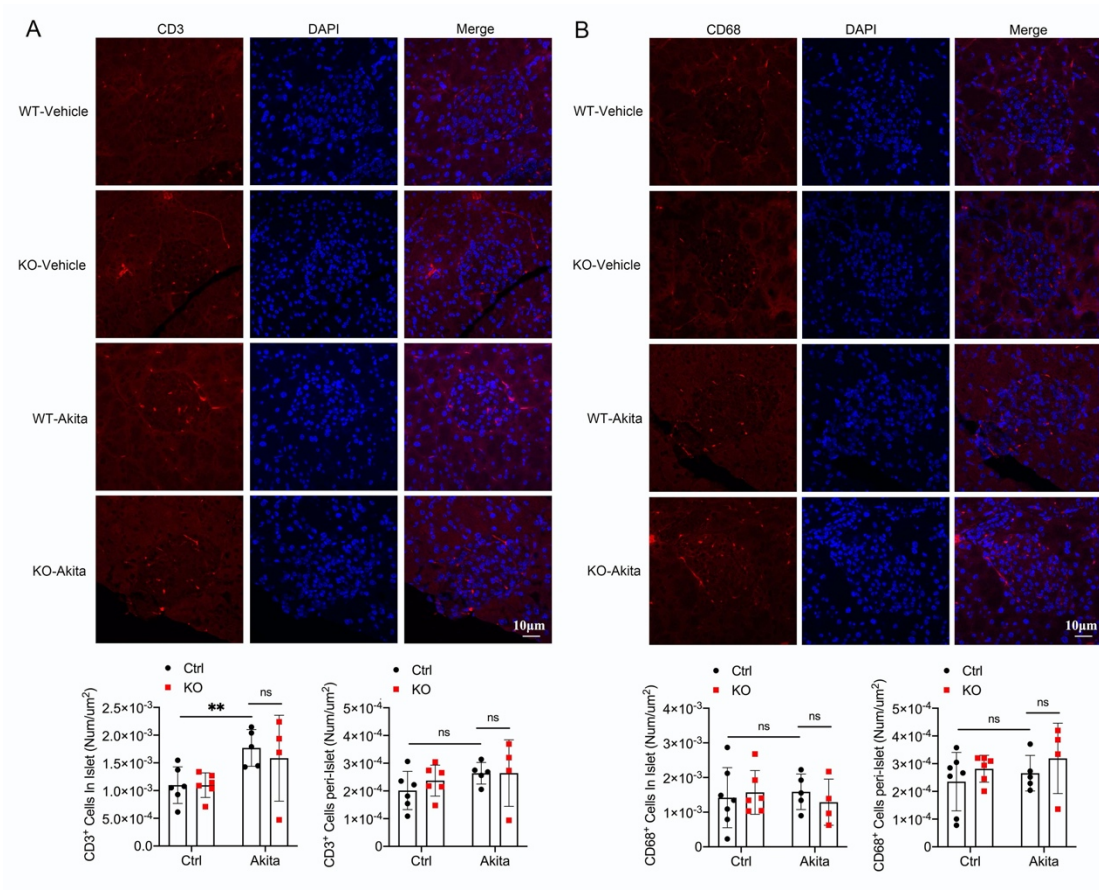


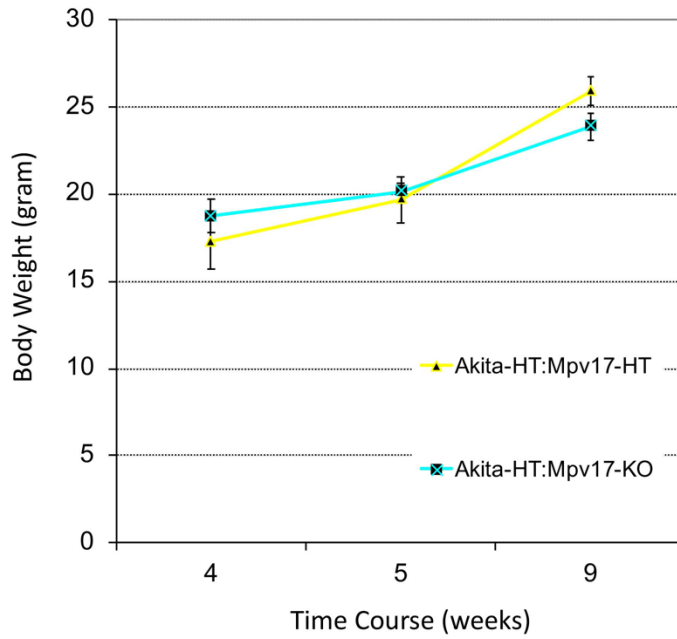
**Supplemental Figure 1.** Breeding strategy for production of Mpv17 wild-type and knockout mice carrying  $Ins^{Akita}$ .



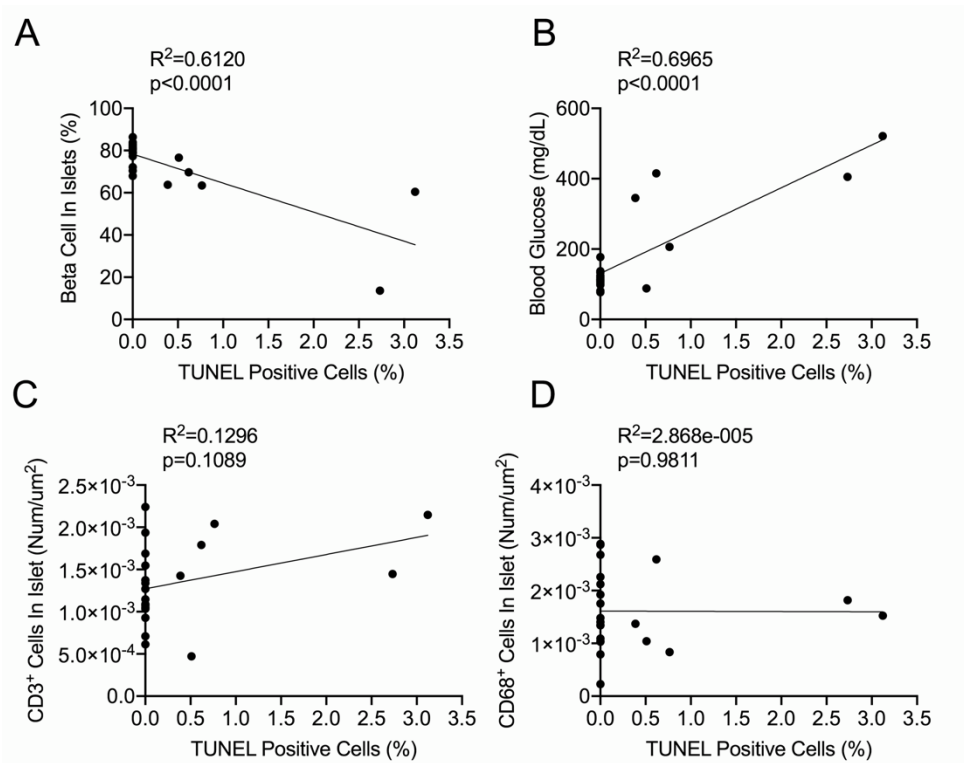
**Supplemental Figure 2.** Blood glucose levels of the high-dose STZ diabetic mouse model. WT: wildtype (n=4); KO: Mpv17 mutant (n=10). The comparison between the two groups was performed using two-tailed, unpaired Student's t-test. \* $p < 0.05$ , statistically significant.



**Supplemental Figure 3.** CD3 and CD68 staining for analysis of CD3<sup>+</sup> (A) and CD68<sup>+</sup> cells (B) infiltration in islets and peri-islets in the mice described in Figure 2B. The results are presented with mean  $\pm$  SD of each group of mice. Comparisons between groups were performed using two-way ANOVA followed by Bonferroni post-hoc test. \* $p < 0.05$ , statistically significant; \*\* $p < 0.01$ , statistically very significant; ns: no significant difference.

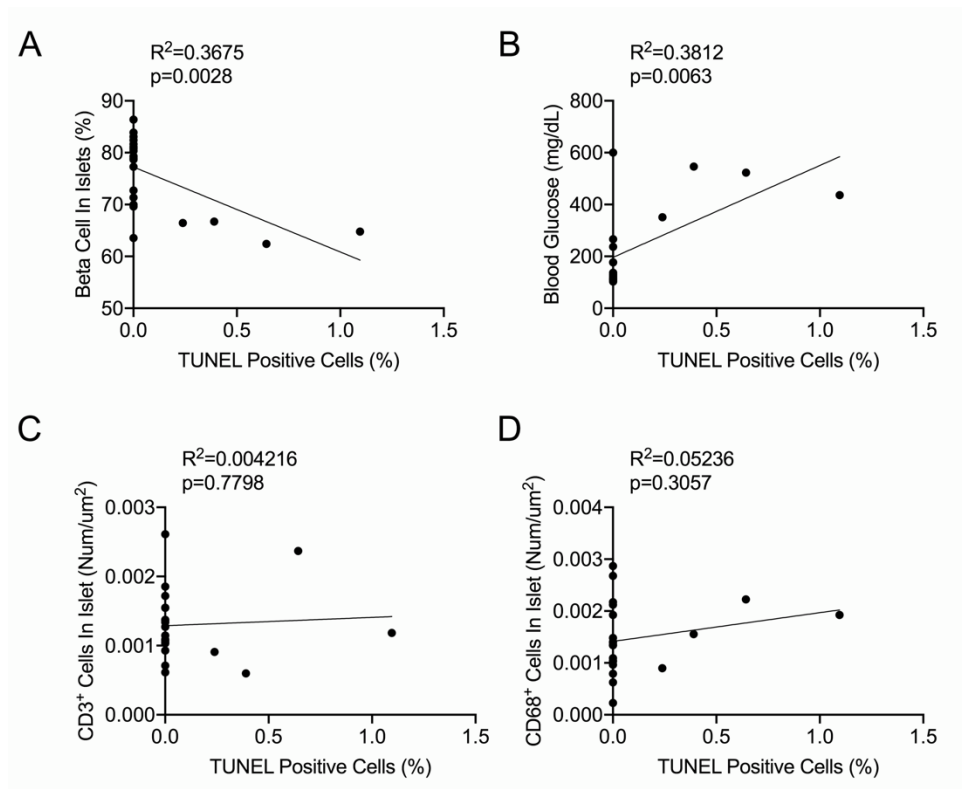


**Supplemental Figure 4.** Body weight of MPV17 mutant and control mice with  $Ins2^{Alita}$ . The comparison between the two groups was performed using two-tailed, unpaired Student's t-test.

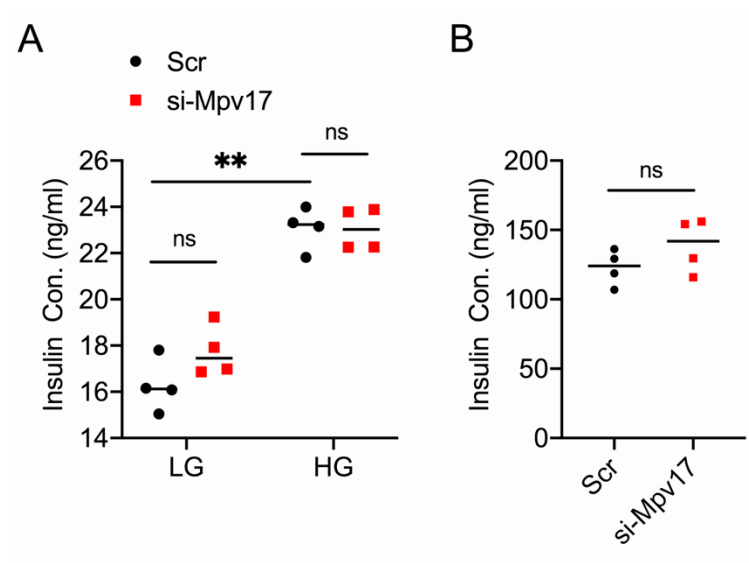


**Supplemental Figure 5.** Correlations between beta-cell apoptosis vs. beta-cell number (A), blood glucose (B), CD3+ cell number (C), and CD68+ cell number (D) in the STZ model.

Correlation analysis was performed using two-tailed correlations analysis, and  $R^2$  was computed with each paired X with Y.



**Supplemental Figure 6.** Correlations between beta-cell apoptosis vs. beta-cell number (A), blood glucose (B), CD3<sup>+</sup> cell number (C), and CD68<sup>+</sup> cell number (D) in the Akita model. Correlations analysis was performed using two-tailed correlations analysis, and  $R^2$  was computed with each paired X with Y.



**Supplemental Figure 7.** The effect of MPV17 deficiency on insulin secretion of beta-cells. MPV17 deficiency did not affect insulin content in the supernatant of medium (A) and in the cell lysates (B). LG: low glucose (2.8 mM); HG: high glucose (16.7 mM). The result is presented with mean  $\pm$  SD. Comparisons between groups were performed using two-way ANOVA followed by Bonferroni post-hoc test. \*\* $p < 0.01$ , statistically very significant; ns: no significant difference.