

## **Supplemental Figures**

**GRP56 promotes diabetic kidney disease through eNOS regulation in glomerular endothelial cells**

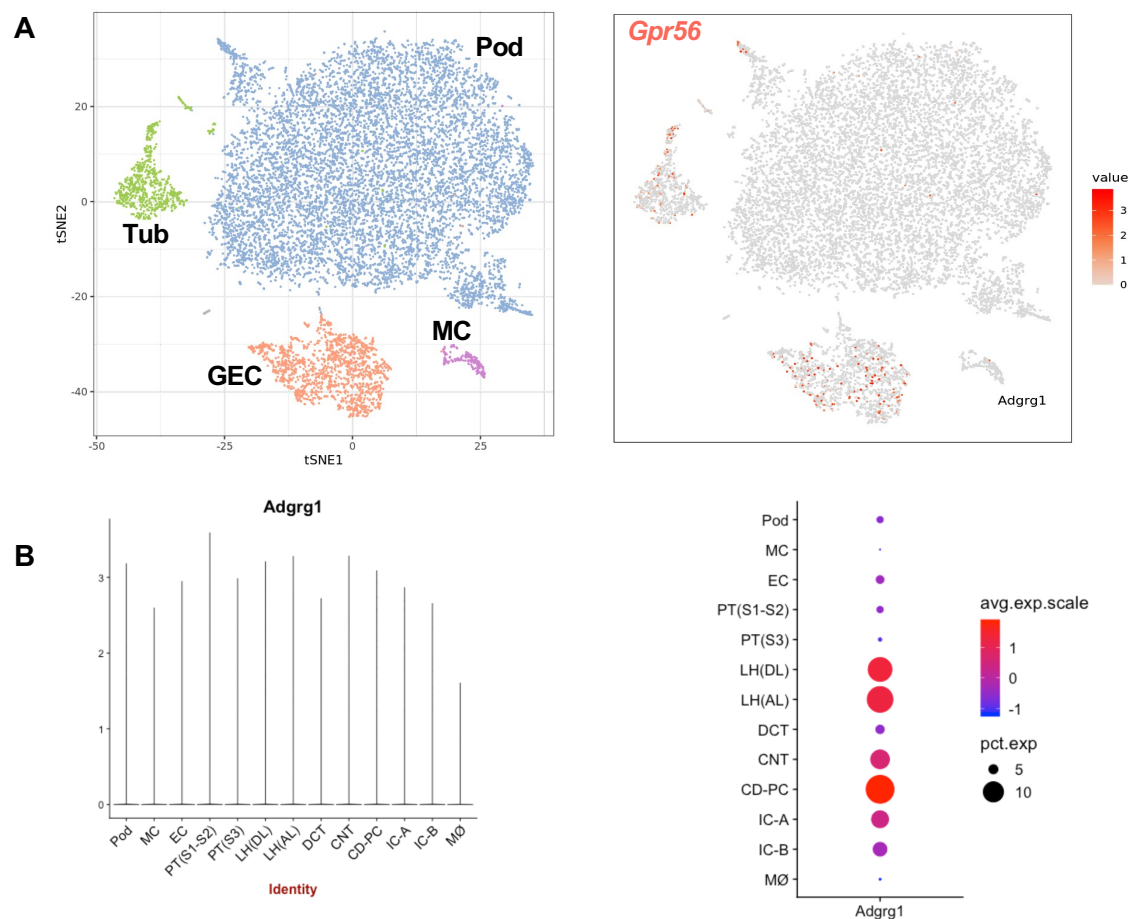
Wu J. et al.

**Supp. Figure 1**

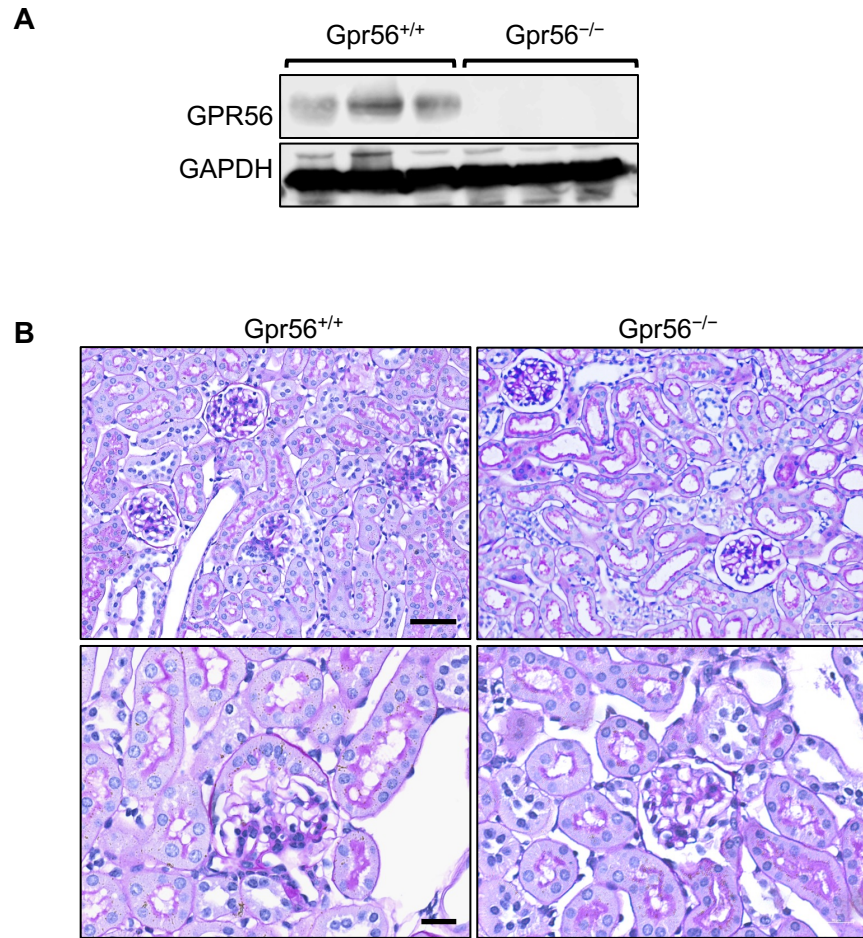
**Supp. Figure 2**

**Supp. Figure 3**

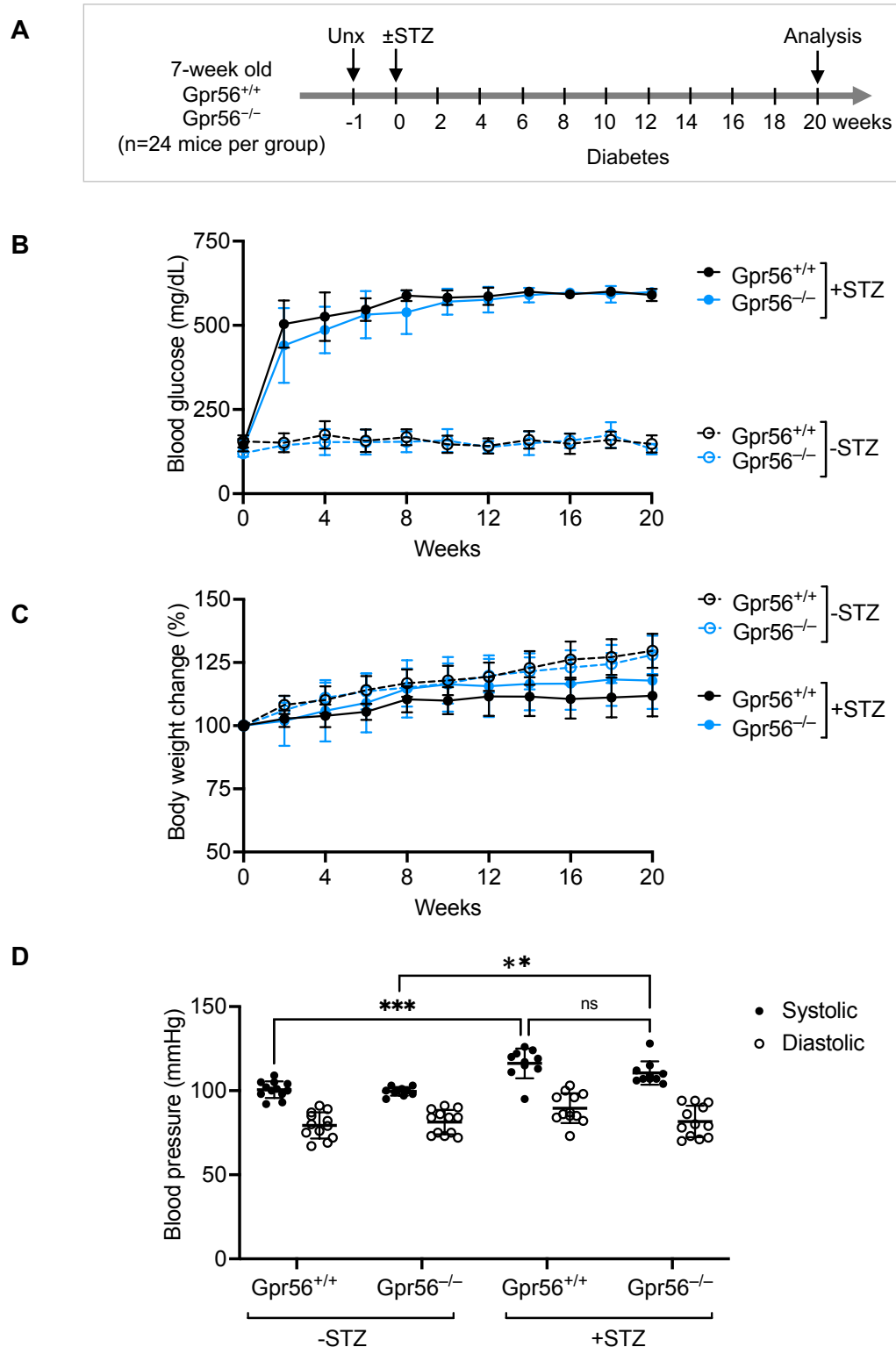
Suppl. Fig. 1



**Suppl. Figure 1: Expression of *GPR56/ADGRG1* in mouse glomerular single-cell transcriptomes.** (A) scRNA-seq analysis of glomerular cells (adapted from Karaikos et al., 2018) shows a predominant expression of *Gpr56* mRNA in GECs among glomerular cells. (B) *Gpr56* (*Adgrg1*) expression in mouse kidney single-nuclear RNAseq dataset from Wu et al., 2019 (<http://humphreyslab.com/SingleCell/>).



**Suppl. Figure 2: Normal kidney phenotypes in GPR56 knockout mice.** (A) Western blot analysis of kidney lysates of Gpr56<sup>+/+</sup> and Gpr56<sup>-/-</sup> mice show complete loss of GPR56 expression in Gpr56<sup>-/-</sup> mice. (B) Representative images of periodic acid-Schiff-stained kidney sections of 8-month old mice show normal kidney histology in in Gpr56<sup>-/-</sup> mice. Scale bars, 50μm, upper panels; 20μm, lower panels.



**Suppl. Figure 3: Diabetes induction in GPR56 knockout mice.** (A) Schematics of experimental design. Uninephrectomy (Unx) was performed in 7-week old Gpr56<sup>+/+</sup> and Gpr56<sup>-/-</sup> mice (n=24 mice initially in two groups). One week after surgery, diabetes was induced with low-dose streptozotocin injections (STZ); control mice received citrate buffer vehicle (n=12 mice in 4 experimental groups). Kidneys were harvested and analyzed after 20 weeks post diabetes induction. (B-C) Biweekly measurements of blood glucose (B) and body weight change (C) in control and diabetic Gpr56<sup>+/+</sup> and Gpr56<sup>-/-</sup> mice. Diabetes-induced changes in blood glucose and body weight were similar between Gpr56<sup>+/+</sup> and Gpr56<sup>-/-</sup> mice. (D) Blood pressure measurements at 20 weeks post diabetes induction shows moderate elevation of systolic blood pressure in diabetic mice versus control mice that were comparable between Gpr56<sup>+/+</sup> and Gpr56<sup>-/-</sup> mice. \*\*P<0.01 and \*\*\*P<0.001 when compared between indicated groups by 1-way ANOVA with Bonferroni's modifications (n=10-12 mice per group).