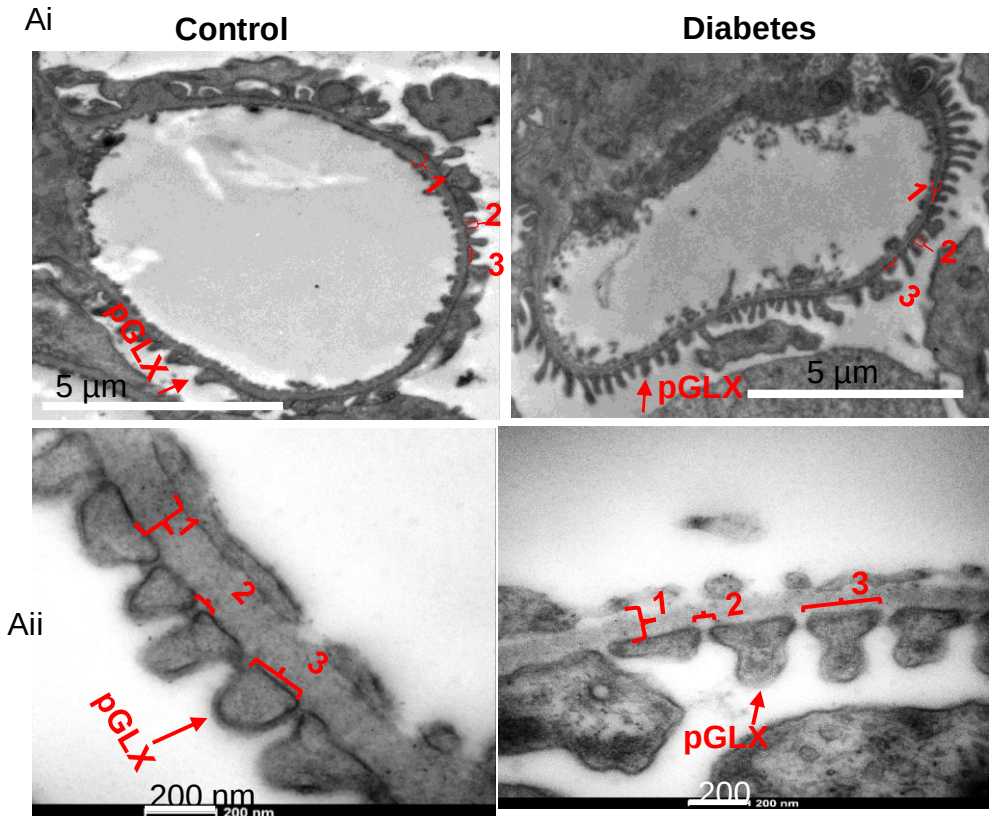
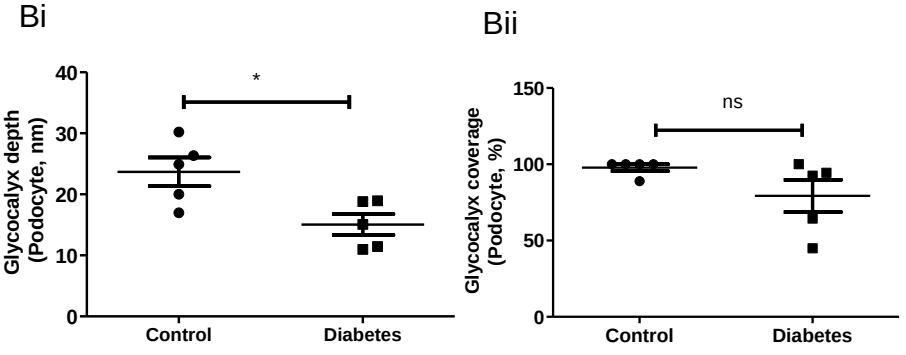
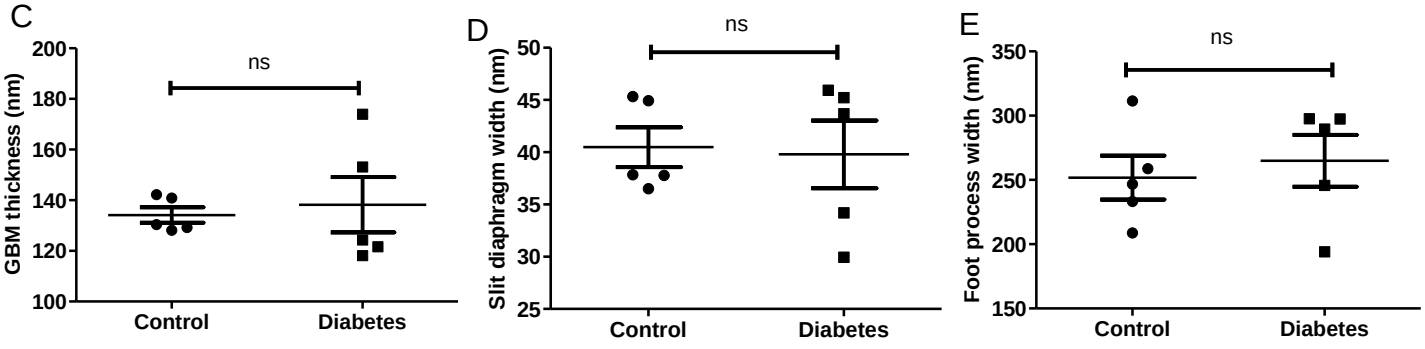
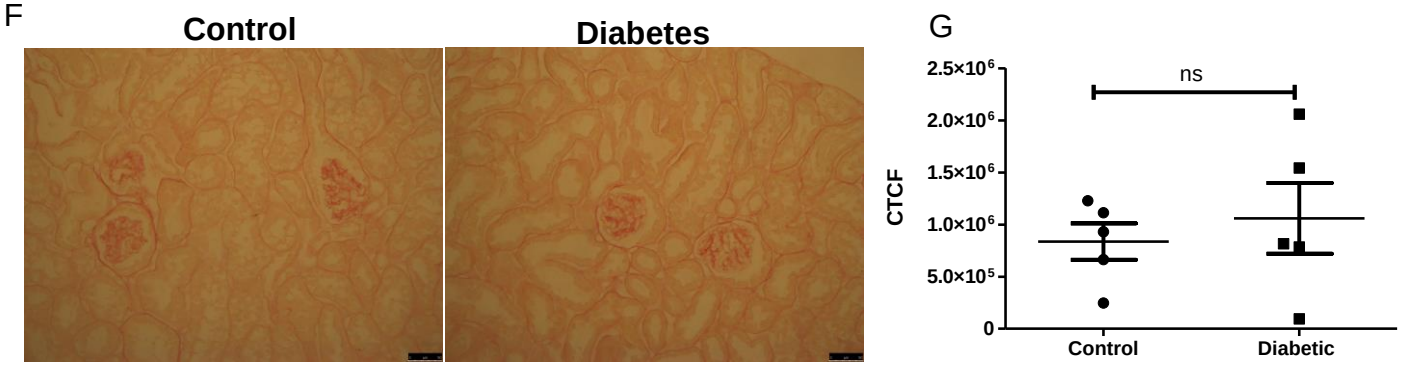
Figure S1


Ai
Control
Diabetes
1
2
3
pGLX
5 µm
Aii
200 nm


Bi
Glycocalyx depth (Podocyte, nm)
*
Control
Diabetes
Bii
Glycocalyx coverage (Podocyte, %)
ns


C
GBM thickness (nm)
ns
D
Slit diaphragm width (nm)
E
Foot process width (nm)
Control
Diabetes


F
Control
Diabetes
G
CTCF
ns
Diabetic

Supplementary Figure 1. Early diabetic kidney disease (DKD) is associated with reduced podocyte glycocalyx but not change in other podocyte or GBM parameters. Control and diabetic mice were perfusion-fixed for electron microscopy with cacodylate buffer containing glutaraldehyde and Alcian blue. Representative electron micrographs of the glomerular capillary wall are shown at lower and higher magnification (Ai, ii). The measurements were carried out on 3 capillary loops per glomerulus and 2–3 glomeruli were used per mouse. Labels indicate podocyte glycocalyx (pGLX), basement membrane (GBM, 1), podocyte slit diaphragm width (2) and podocyte foot process width (3) (scale bar =200nm). Quantification of (A, Bi) pGLX depth (control 23.70 ± 2.341 n=5 mice, diabetes 15.06 ± 1.713 n=5 mice, *p=0.0176) and (A, Bii) percentage podocyte with GLX coverage (control 97.78 ± 2.222 n=5 mice, diabetes 79.28 ± 10.57 n=5 mice, non significant (ns)); (A, C) GBM thickness (control 134.2 ± 3.047 n=5, diabetes 138.2 ± 10.89 n=5 mice, ns). (A, D) podocyte slit diaphragm width (control 40.48 ± 1.914 n=5 mice, diabetes 39.79 ± 3.243 n=5 mice, ns); (A. E) podocyte foot process width (control 251.8 ± 17.07 n=5 mice, diabetes 264.9 ± 20.16 n=5 mice, ns). (F, G) Picro Sirius red staining was carried out on control and diabetic kidney sections and representative immunohistochemistry images demonstrate no change in collagen deposition in diabetic glomeruli when compared to control (a minimum of 3 glomeruli were analysed per mouse, control 836500 ± 175700 n=5 mice, diabetes 1060000 ± 339200 n=5(ns)). Each dot or square on the graph represents a mouse. Data is expressed as the mean ± SEM and unpaired *t* test at week 9 post STZ was used for statistical analysis.