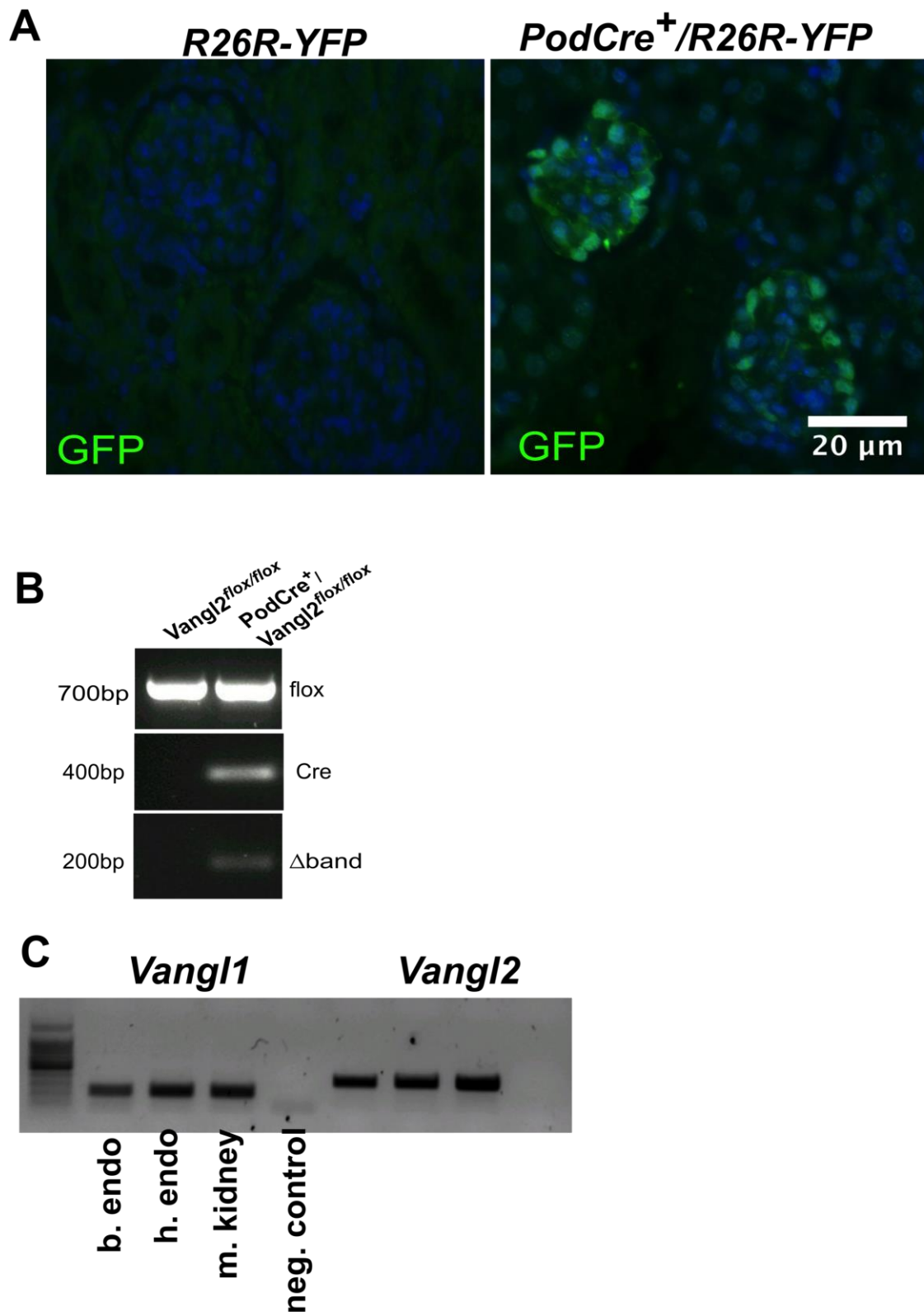


**Vangl2, a planar cell polarity molecule, is implicated in irreversible and reversible kidney glomerular injury.**

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**Supplementary Figures and Tables**

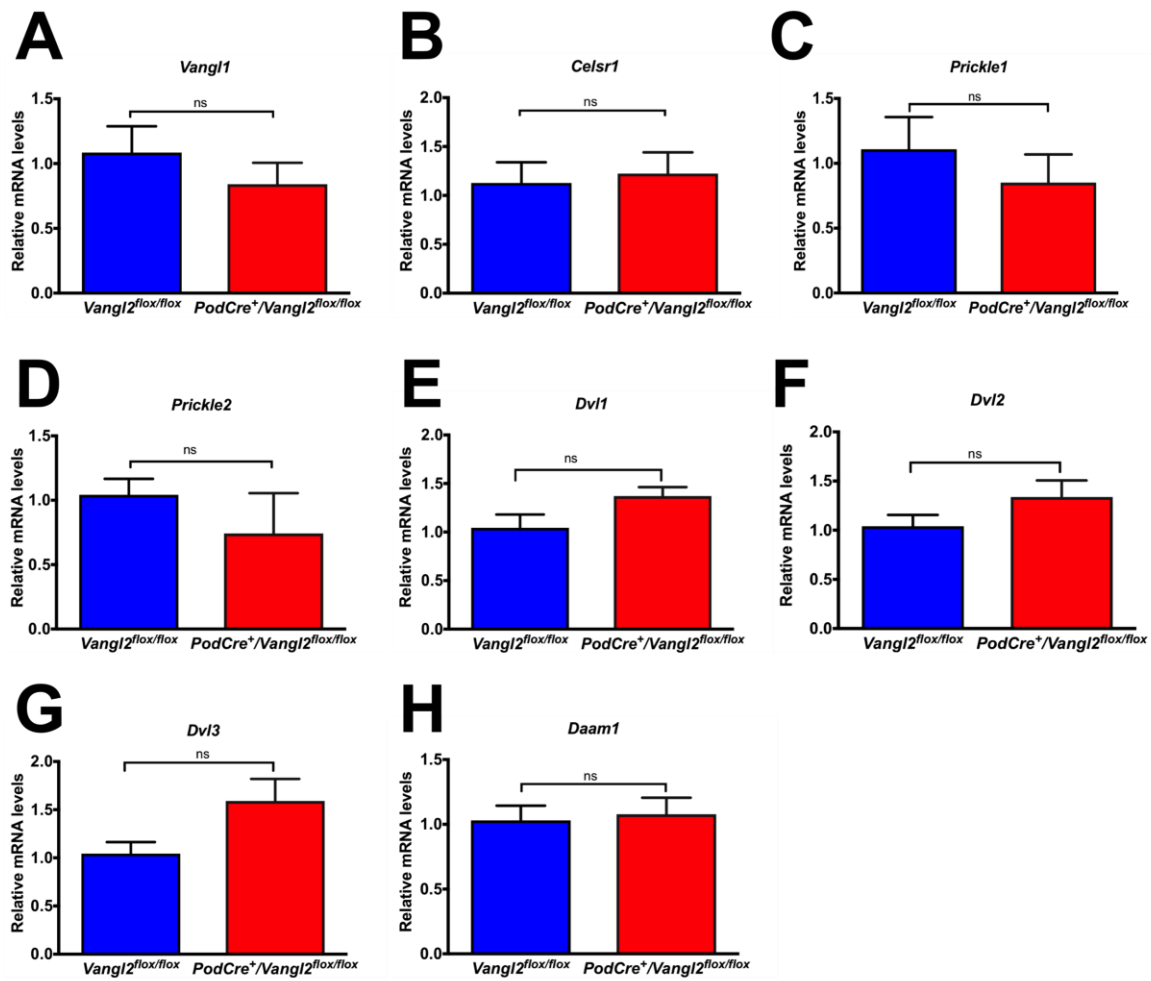


**Supplementary Figure S1. (A)** Representative images of immunostaining for green fluorescent protein (GFP) to detect expression of the *Podocin-Cre* promoter in *PodCre<sup>+</sup>/R26R-YFP* mice and littermate controls ( $n = 2$  in each group). **(B)** PCR reaction

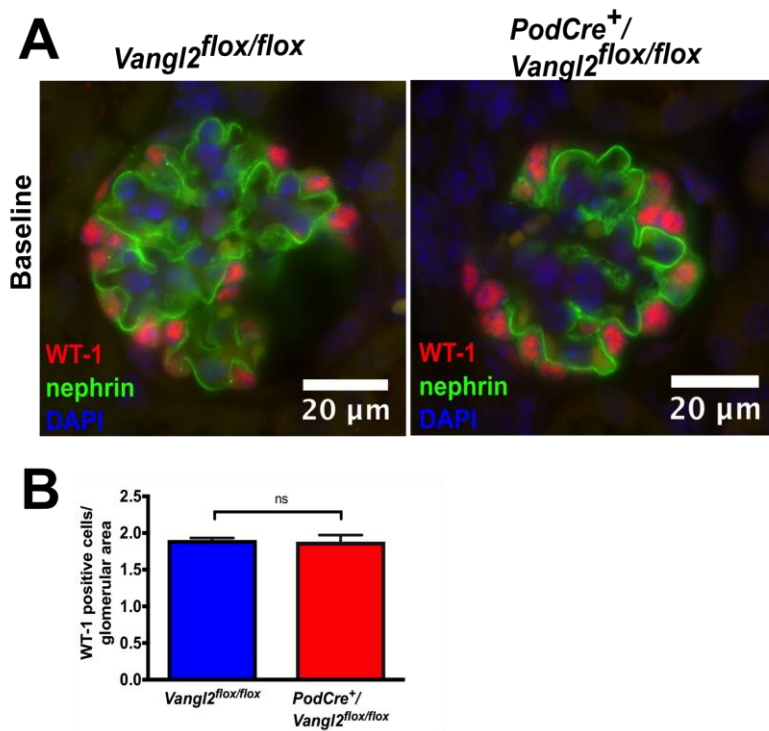
from DNA isolated from kidney cortex of newborn mice, detecting the floxed *Vangl2* allele (top panel), the *Cre* positive allele (middle panel) and the allele remaining after excision of exon 4 (bottom panel) in *PodCre<sup>+</sup>/Vangl2<sup>fllox/fllox</sup>* mice. **(C)** PCR reaction from DNA isolated from endothelial cells (brain/heart) and mouse kidney detecting *Vangl1* and *Vangl2*.

b.endo = brain endothelial cell; h.endo = heart endothelial cell; m.kidney = mouse kidney;

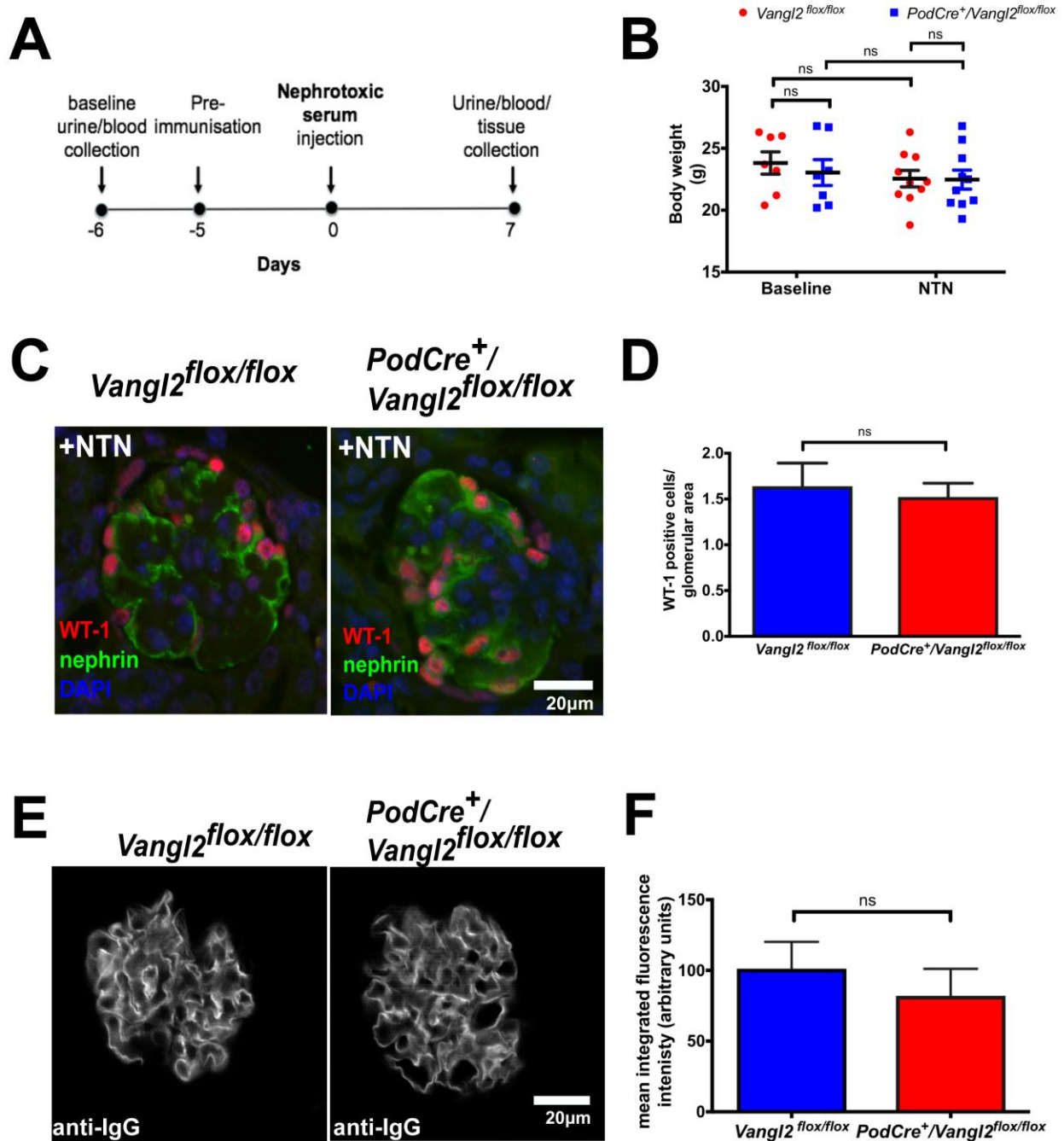
neg.control = negative control.



**Supplementary Figure S2.** Quantification of *Vangl1* (A), *Celsr1* (B), *Prickle1* (C), *Prickle2* (D), *Dvl1* (E), *Dvl2* (F), *Dvl3* (G), *Daam1* (H) mRNA in glomerular isolates of *Vangl2<sup>flox/flox</sup>* and *PodCre<sup>+</sup>/Vangl2<sup>flox/flox</sup>* mice by RT-qPCR ( $n = 5$ ). Data is presented as mean  $\pm$  SEM.

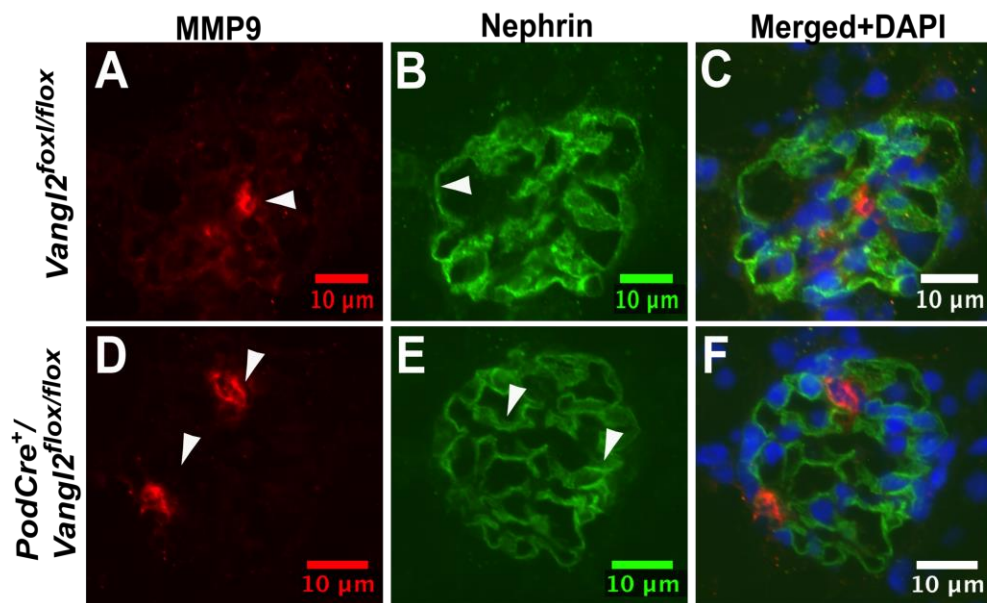


**Supplementary Figure S3. (A)** Representative images of immunostaining for WT-1, nephrin and DAPI in glomeruli from *Vangl2<sup>flox/flox</sup>* and *PodCre<sup>+</sup>/  
Vangl2<sup>flox/flox</sup>* mice at baseline. **(B)** Quantification of the average number of WT1 positive podocytes normalised to glomerular area in *Vangl2<sup>flox/flox</sup>* ( $n = 6$ , 30 glomeruli/sample) and *PodCre<sup>+</sup>/  
Vangl2<sup>flox/flox</sup>* mice ( $n = 4$ , 30 glomeruli/sample).



**Supplementary Figure S4. (A)** Time-line of NTN model. **(B)** Body weights, **(C)** representative pictures of immunostaining with an antibody against WT1 and **(D)** quantification of WT-1 positive cells/glomerular area 7 days after NTN ( $n = 6-11$  per genotype and 30 glomeruli/sample). **(E)** Representative pictures of immunostaining with an antibody against sheep IgG in *Vangl2<sup>flox/flox</sup>* and *PodCre<sup>+</sup>/Vangl2<sup>flox/flox</sup>* mice and **(F)**

quantification of mean fluorescence in 30 glomeruli per sample (*Vangl2*<sup>flox/flox</sup>,  $n = 6$ ;  
*PodCre*<sup>+</sup>/*Vangl2*<sup>flox/flox</sup>,  $n = 7$ ). Scale bar = 20  $\mu\text{m}$



**Supplementary Figure S5.** Representative pictures of immunostaining for MMP9 (**A** and **D**) and nephrin (**B** and **E**) in *Vangl2<sup>flox/flox</sup>* and *PodCre<sup>+</sup>/Vangl2<sup>flox/flox</sup>* mice (upper and lower panel respectively) at baseline. Arrowheads in **A** and **D** show podocyte MMP9 expression and in **B** and **E** nephrin expression. No overlap was observed in either genotype in healthy animals (**C** and **F**).



	Sex (M/F)	Age (years)	Creatinine (mg/dl)	Proteinuria (g/24h)	eGFR (MDRD) [ml/min/1.73m <sup>3</sup> ]
<b>MCD</b>	<b>3/2</b>	<b>36.32 ±12.45</b> <b>[21.13-54.37]</b>	<b>1.00 ±0.70</b> <b>[0.54-2.40]</b>	<b>8.35± 6.07</b> <b>[0.10-14.8]</b>	<b>109.99 ± 52.99</b> <b>[22.37-165.50]</b>
<b>FSGS</b>	<b>7/3</b>	<b>43.36±12.66</b> <b>[21.12-63.08]</b>	<b>1.09±0.59</b> <b>[0.60-2.70]</b>	<b>3.51±2.24</b> <b>[0.60-8.40]</b>	<b>81.25±33.34</b> <b>[20.88-124.62]</b>
<b>LD</b>	<b>9/9</b>	<b>46.81±12.55</b> <b>[22.09-62.00]</b>	<b>1.30±0.20</b>	*	*

\* normal as per pre-transplant assessment

**Supplementary Table S1. Disease characteristics of patients whose samples were obtained from the European Renal cDNA Bank.** minimal change disease (MCD), focal segmental glomerulosclerosis (FSGS), living donor (LD), male (M), female (F), eGFR (estimated glomerular filtration rate).