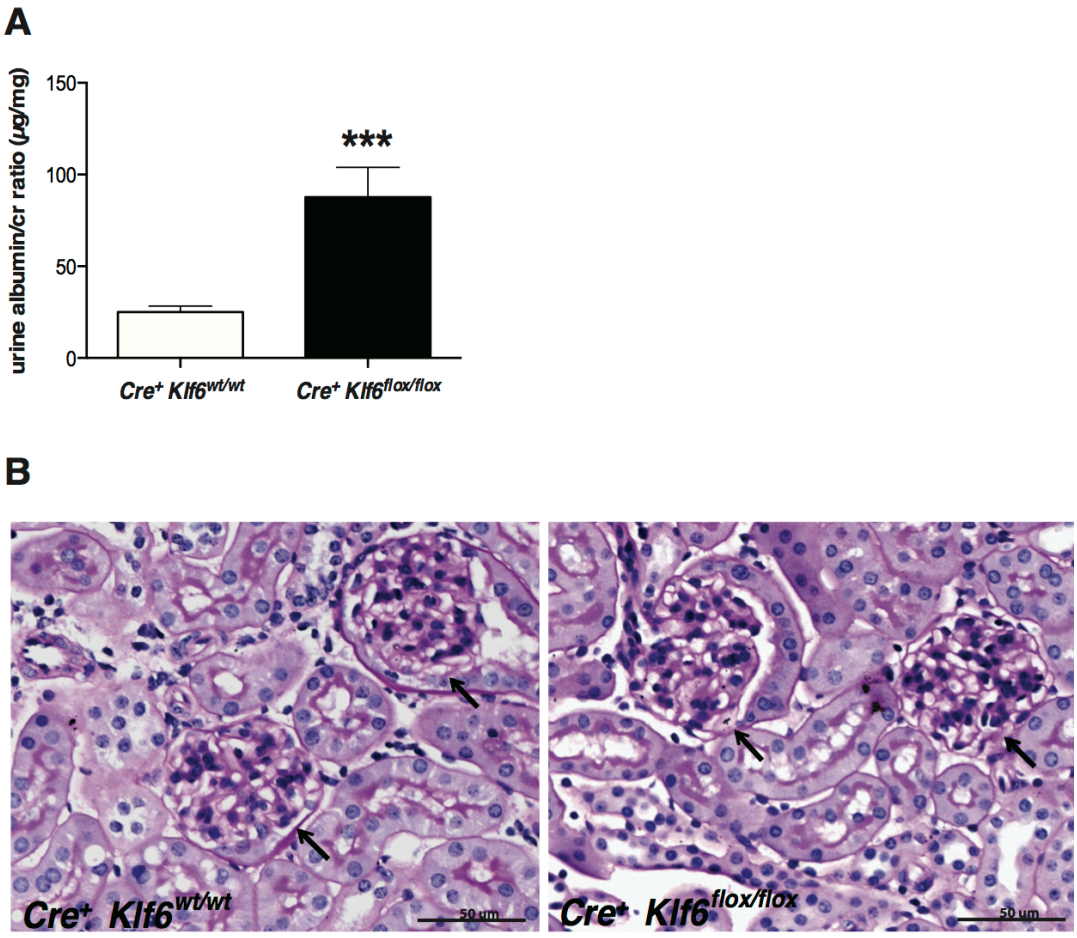
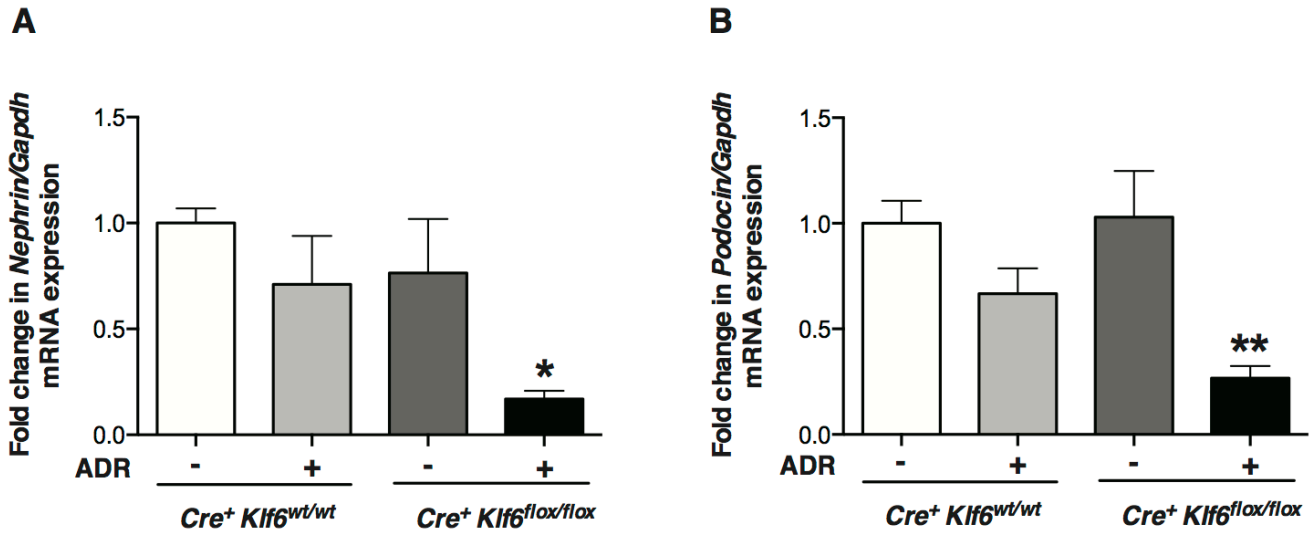
SUPPLEMENTARY FIGURES

Supplementary Figure 1



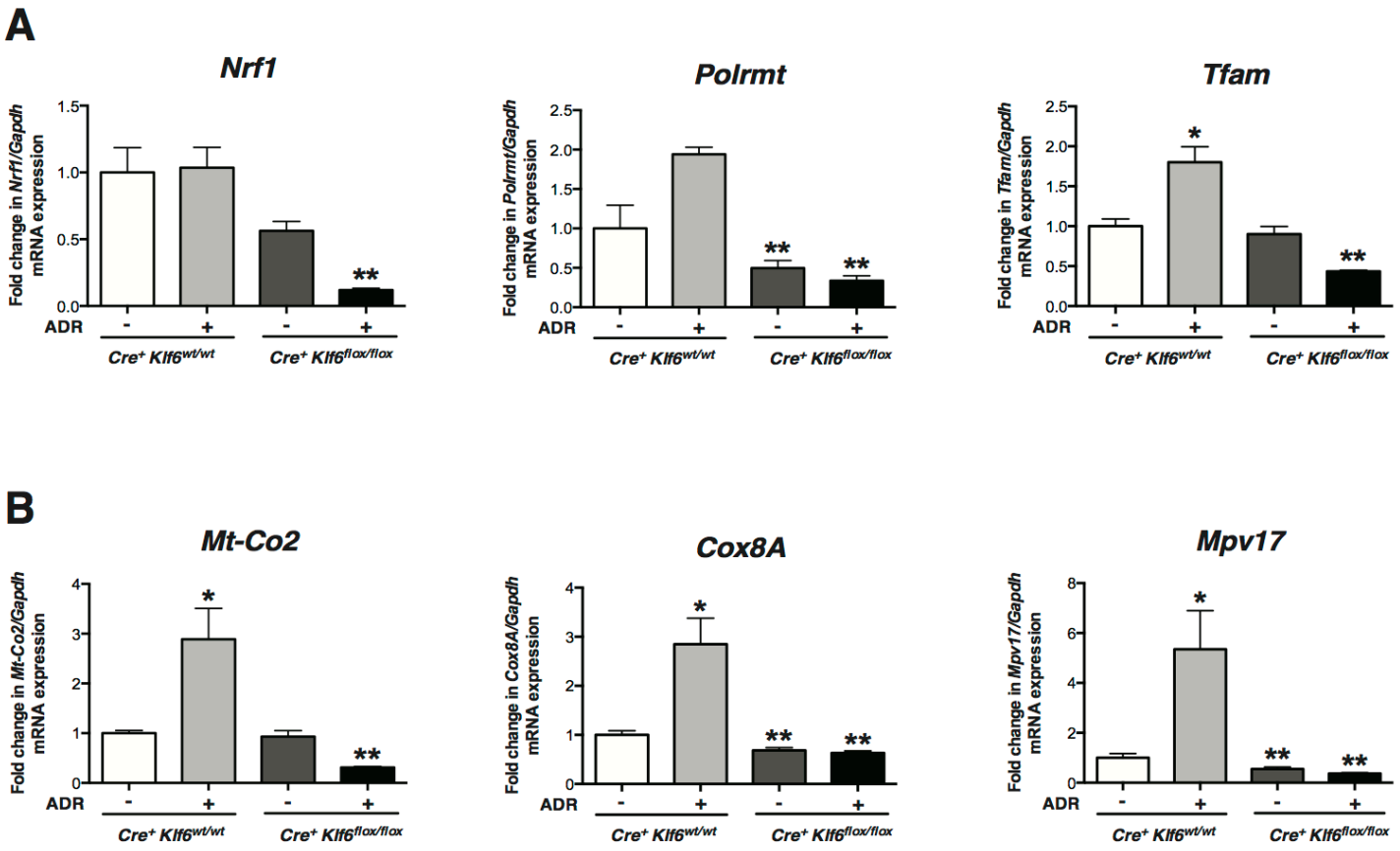
Supplementary Figure 1: *Podocin-Cre Klf6$^{flox/flox}$* mice exhibit minimal glomerular injury at baseline. Urine was collected from 12-week old gender matched *Podocin-Cre Klf6$^{flox/flox}$* and *Podocin-Cre Klf6$^{+/+}$* mice. All mice were sacrificed and renal cortex fixed for histology. (A) Albuminuria (urine albumin/creatinine) was measured in *Podocin-Cre Klf6$^{flox/flox}$* and *Podocin-Cre Klf6$^{+/+}$* mice. (n=10, ***p<0.001, Mann-Whitney test). (B) Periodic acid-Schiff (PAS) was performed to evaluate for glomerular or tubulointerstitial changes (X 40). The representative images from 10 mice in each group are shown. Arrows show normal glomeruli. No tubulointerstitial inflammation or injury was observed.

Supplementary Figure 2



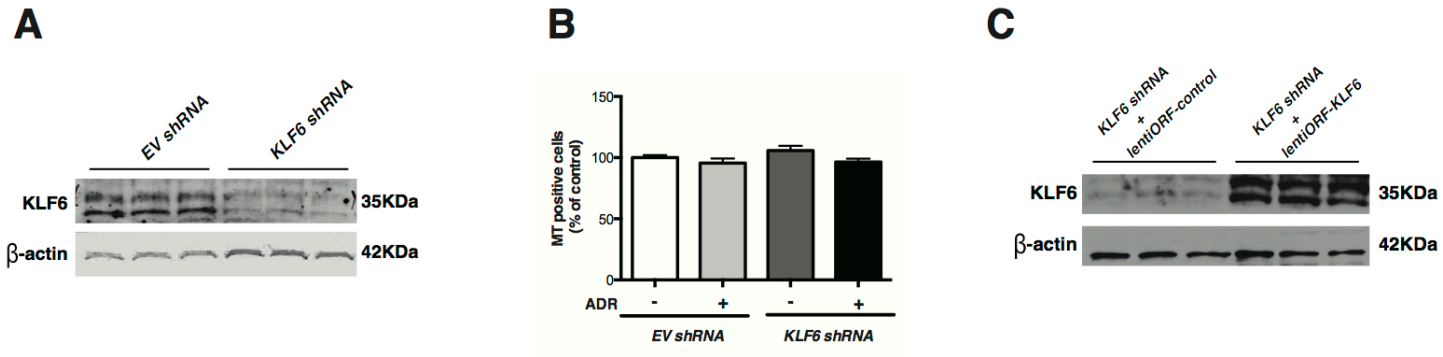
Supplementary Figure 2: *Podocin-Cre Klf6$^{flox/flox}$* mice exhibit a reduction in podocyte differentiation markers with adriamycin treatment. *Podocin-Cre Klf6$^{flox/flox}$* and *Podocin-Cre Klf6$^{+/+}$* mice were treated with adriamycin (ADR) at 12 weeks of age. All mice were sacrificed, glomeruli isolated, and RNA extracted for real-time PCR. (A) *Nephrin* and (B) *Podocin* mRNA expression levels are shown (n=4, *p<0.05, **p<0.01 versus all other groups, Kruskal-Wallis test with Dunn's post-test).

Supplementary Figure 3



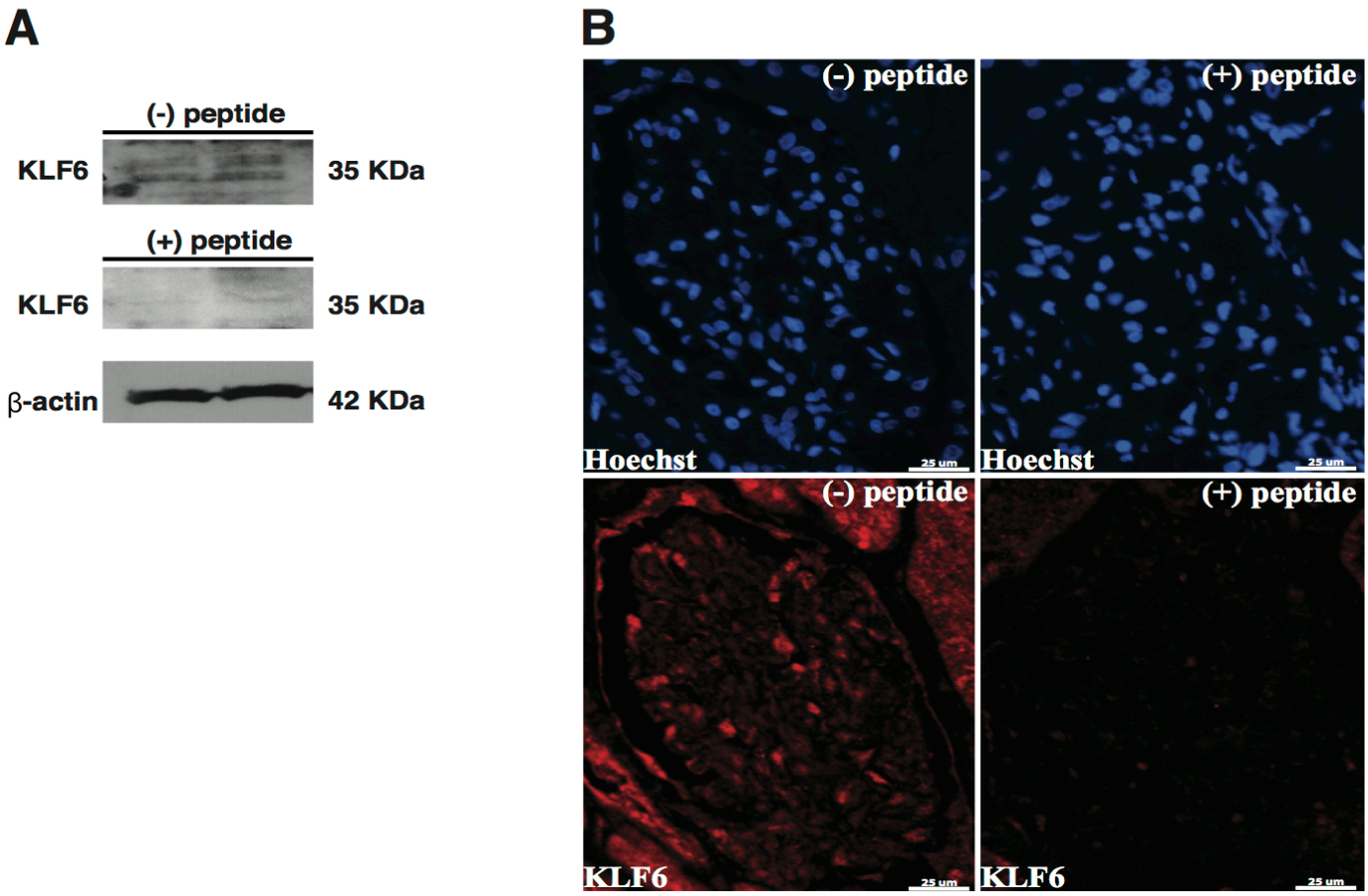
Supplementary Figure 3: *Podocin-Cre Klf6$^{flox/flox}$* mice demonstrate a reduction in transcripts involved in mitochondrial replication, transcription, and function with adriamycin treatment. Primary podocytes were isolated and cultured from *Podocin-Cre Klf6$^{flox/flox}$* and *Podocin-Cre Klf6$^{+/+}$* mice. Cultured podocytes were treated with adriamycin (ADR) for 12 hours and RNA was extracted for real-time PCR. (A) The expression of transcripts involved in mitochondrial replication and transcription (*Nrf1, Polrmt, Tfam*) and in (B) mitochondrial function (*Mt-co2, Cox8A, Mpv17*) are shown in podocytes isolated from *Podocin-Cre Klf6$^{+/+}$ and Podocin-Cre Klf6$^{flox/flox}$* mice treated with and without ADR (n=4, **p<0.01, *p<0.05 versus all other groups, Kruskal-Wallis test with Dunn's post-test).

Supplementary Figure 4



Supplementary Figure 4: shRNA-mediated *KLF6* knockdown exhibit no change in mitochondrial number. (A) Confirmation of shRNA mediated *KLF6* knockdown is shown using western blot analysis. The representative blot of three independent experiments is shown. (B) To assess if a change in the mitochondrial number influenced the measurements in mitochondrial function, ADR-treated and untreated EV-shRNA and *KLF6*-shRNA human podocytes were isolated and stained with MitoTracker (MT) Deep Red FM probe and flow cytometry was performed. Mitochondrial biomass was quantified by measuring the percentage of MT positive cells (n=6, not significant, Kruskal-Wallis test with Dunn's post-test). (C) Confirmation of transient expression of lentiORF-*KLF6* in *KLF6*-shRNA human podocytes is shown using western blot analysis. The representative blot of three independent experiments is shown (KLF6 and β-actin are from the same samples run on parallel gels).

Supplementary Figure 5



Supplementary Figure 5: Specificity of KLF6 antibody is demonstrated using a peptide block. (A) Western blot was performed for KLF6 on protein extracts from human podocytes with (+) and without (-) KLF6 recombinant protein (immunizing peptide). The representative blot of three independent experiments is shown (Both (+) KLF6 and (-) KLF6 are from the same samples that were run in parallel on the same blot, but were cut and incubated separately with (+) and without (-) peptide). (B) Immunostaining for KLF6 was performed on kidney sections from human biopsies with and without the KLF6 recombinant protein (immunizing peptide). The representative images from three independent specimens from each group are shown (X 20).

Supplementary Table 1: Primer Sequences for Real-Time PCR

Gene	Forward primer	Reverse primer
Human *KLF4*	TTACGCGGGCTGCGGCAAAAC	GGCGGTGCCCCGTGTGTTTAC
Human *KLF6*	CGGACGCACACAGGAGAAAA	CGGTGTGCTTTCGGAAGTG
Human *KLF7*	TAAAGGCCCACCAGAGGACT	CATGTGGAGGGCAAGATGGT
Human *KLF8*	GCAGCCATTACAGTCCCACT	TCTTCTCCCTGCATTTGGGC
Human *KLF9*	GCCTCCGAAAAGAGGCACAAG	CGGAACTGCTTTTCCCCAGTG
Human *KLF10*	TCTGTGGCCAAGCAGCC	TCCAACTGCAGCTCATTGACA
Human *KLF11*	GTTGCGGATAAGACCCCTCAC	TGGAATCTGTTACTTGGGGAGA
Human *KLF12*	CTCCTGCTCTGCAGCTTCTGTTC	GTGGACGTTTGGAGACCCTTG
Human *KLF13*	GAGGAAGCACAAGTGCCACTACG	GGGGCAGCTGAACTTCTTCTC
Human *KLF14*	TTACAAGTCGTCGCACCTCAA	TCTGGATGATAGGTTGGGTGG
Human *KLF15*	GTTGGGTATCTGGGTGATAGGC	TGAGAGTCGGGACTGGAACAG
Human *KLF16*	GCCTACTACAAGTCCTCGCACCT	GCCCTGCCAGTCACAAGCAAA
Mouse *Klf6*	ACACGTAGCAGGGCTCACTC	CACGAAACGGGCTACTTCTC
Mouse *Nephrin*	TGGTCAACTGTGTGTCTGGG	TTATCTGAGCTCCGGGGTGT
Mouse *Podocin*	CCAAATCCTCCGGCTTAGGG	GAAGCAGATGTCCCAGTCGG
Mouse *Nrf1*	AGAAACGGAAACGGCCTCAT	CATCCAACGTGGCTCTGAGT
Mouse *Polrmt*	CCATGCTGAACTGCTGGA	CTCAGGTGTGCCCTCTGC
Mouse *Tfam*	GCTTCCAGGAGGCAAAGGAT	CCAAGCCTCATTTACAAGC
Mouse *Mt-co1*	TGCTAGCCGCAGGCATTACT	CGGGATCAAAGAAAGTTGTGTTT
Mouse *Cox8A*	TCCGGCTGGTTCGGCCATCT	CCAGCCCGCAGGCAGAAGAC
Mouse *Mpv17*	CAACTTCTACCTGGTCCCCC	AGAACTGATGTGCCTTCCAGG
Mouse *Sco2*	CTTCCTCTCGTGCTTGGTCC	CGAGGCTTGAGCTGAGAGAG