Supplemental Data

Chronic Epithelial Kidney Injury Molecule-1 Expression Causes Kidney Inflammation and Fibrosis

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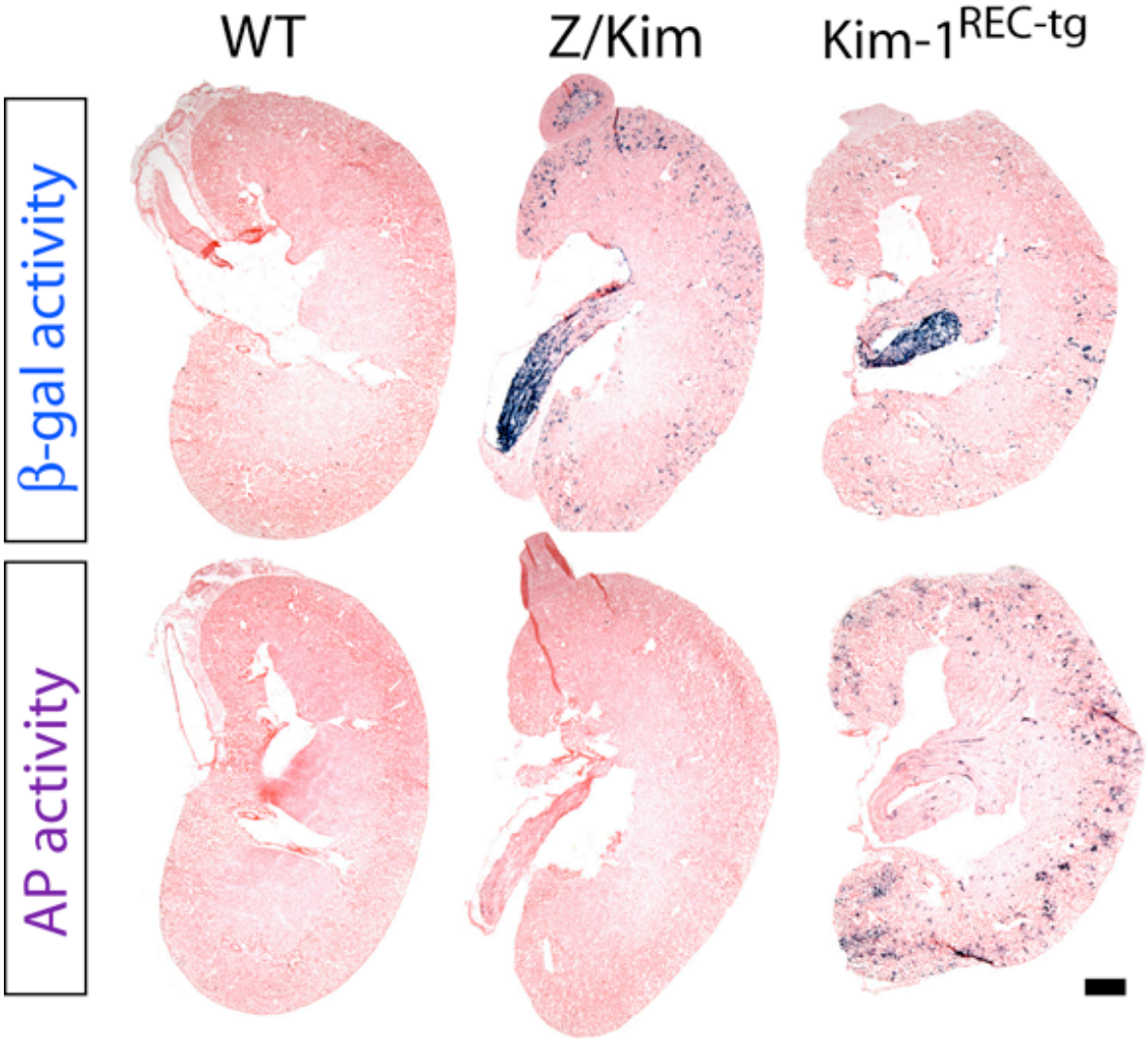
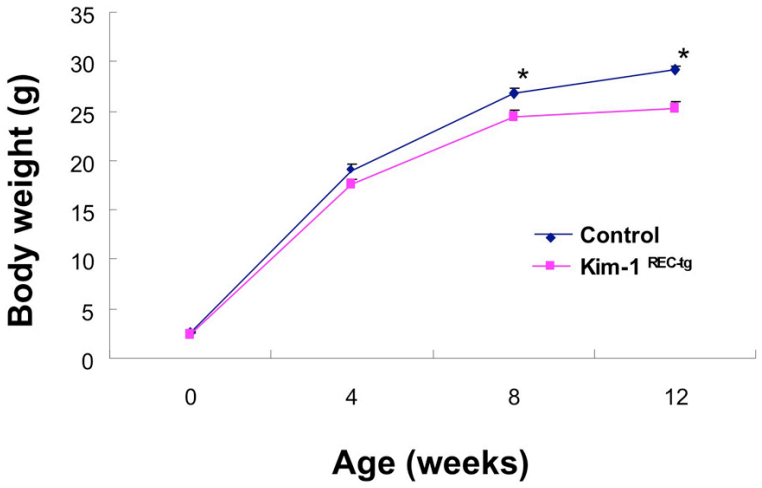
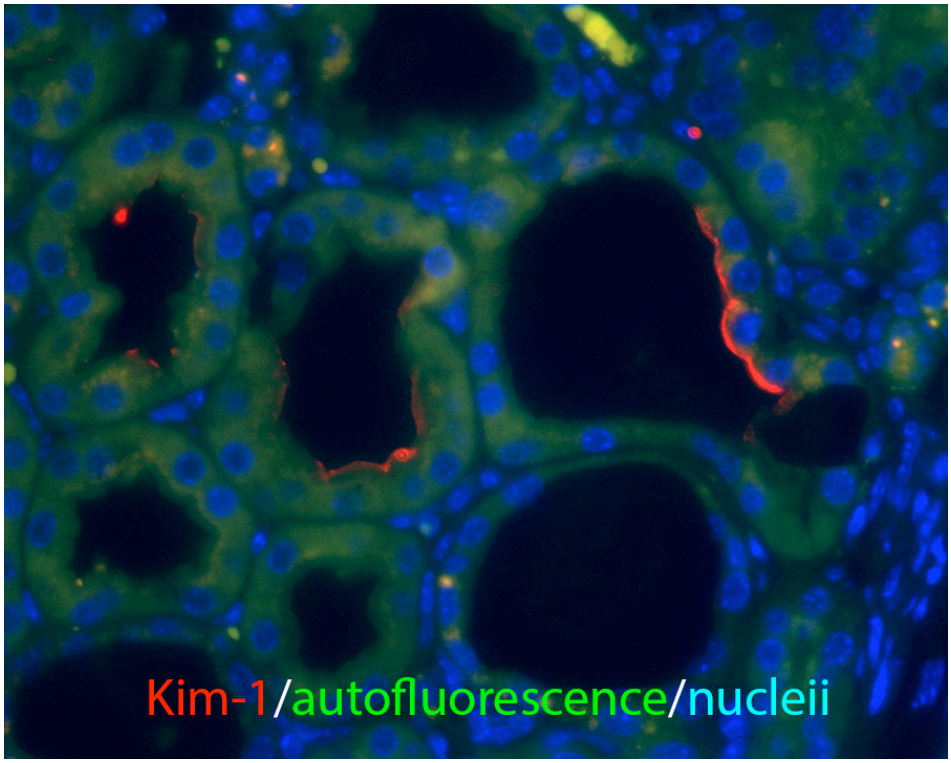


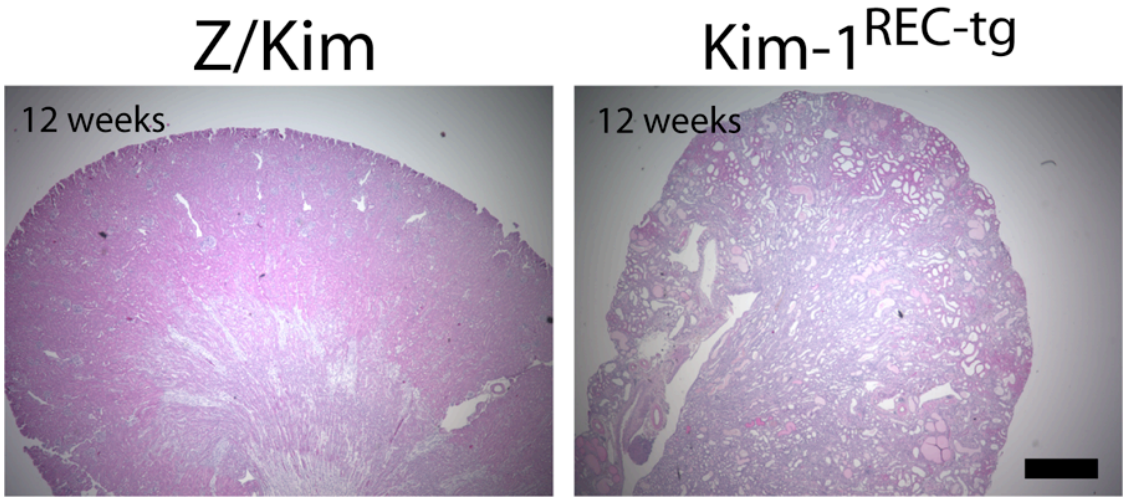
Supplemental Figure 1. Bgal and Cre-dependent AP expression in kidneys from transgenic mice. WT mice do not express either Bgal or AP. In kidneys from 4 week unigenic Z/Kim mice, Bgal expression is localized to tubular epithelia primarily in cortex, to glomeruli and to renal papilla. No leaky AP expression was seen. In kidneys from bigenic Kim-1^{REC-tg} mice, much less cortical Bgal expression was seen and in its place epithelial AP expression was seen. The renal papilla Bgal expression was unchanged, because Six2-GC does not direct Cre expression in ureteric-bud derived structures. Scale bar, 150 μm.



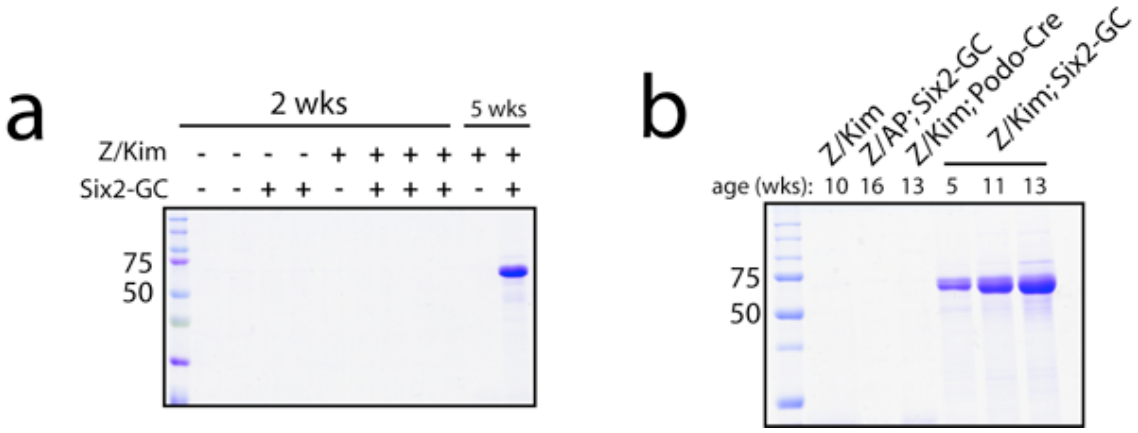
Supplemental Figure 2. Body weight of Control vs. Kim-1^{REC-tg} mice. Body weight was not different at birth or 4 weeks of age, but Kim-1^{REC-tg} gained weight more slowly than littermate controls beginning at 8 weeks. N = 3-7 male mice per timepoint. * $P < 0.05$.



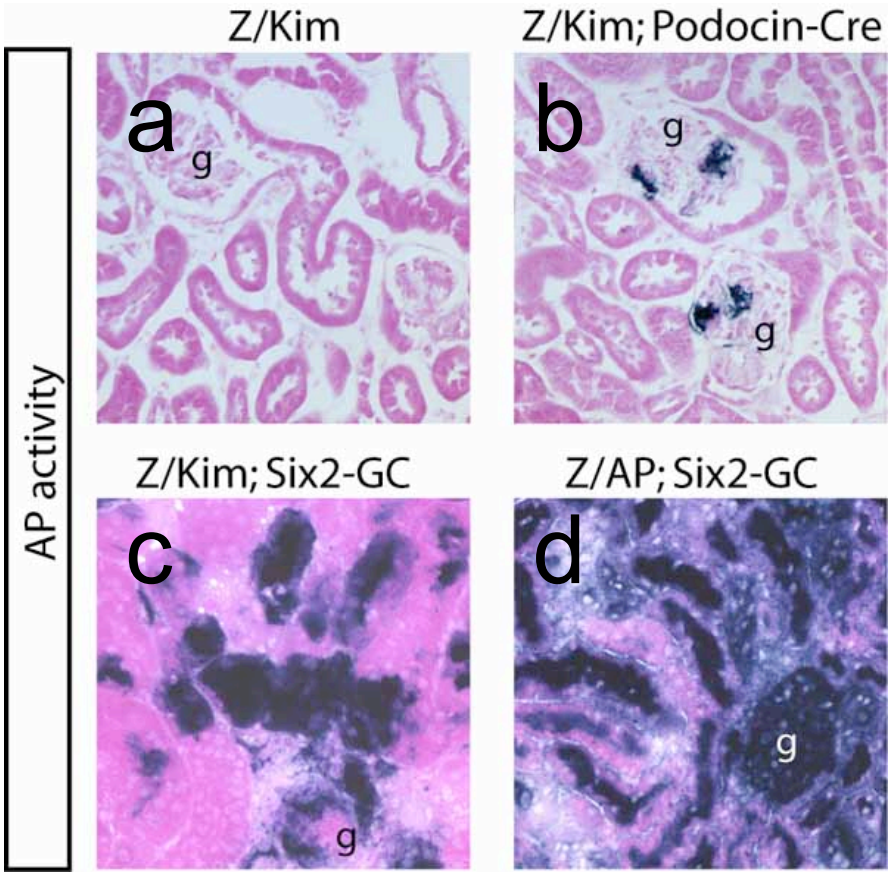
Supplemental Figure 3. Kim-1 expression in tubules of 5-week Kim-1$^{REC\text{-}tg}$ kidneys shows focal expression along the apical membrane of tubular epithelial cells (red).



Supplemental Figure 4. Low power view of kidney histology in Z/Kim vs. Kim-$1^{REC\text{-}tg}$ kidneys at 12 weeks. Kim-$1^{REC\text{-}tg}$ kidneys are characterized by tubular dilation throughout cortex, hyaline casts, interstitial fibrosis and occasional small cysts. Scale bar, 150 μm.



Supplemental Figure 5. Proteinuria in Kim-1$^{REC\text{-}tg}$ but not control mice. (a) Coomassie stain of representative urine samples from control mice or bigenic Z/Kim; Six2-GC (Kim-1$^{REC\text{-}tg}$) at 2 weeks show that none have proteinuria. At 5 weeks a band at 70 kDa appears in Kim-1$^{REC\text{-}tg}$ but not control mice. A total of 5 Kim-1$^{REC\text{-}tg}$ at 2 weeks of age were analyzed for proteinuria and all had undetectable levels by Coomassie stain (data not shown). (b) Urine from control mice (Z/Kim), or from mice with expression of AP alone in renal epithelia (Z/AP; Six2-GC), or from mice with expression of Kim-1 in podocytes (Z/Kim; Podo-Cre) or from Kim-1$^{REC\text{-}tg}$ was separated and coomassie stained. The only genotype that demonstrated proteinuria was the Kim-1$^{REC\text{-}tg}$ (Z/Kim; Six2-GC). This is a representative gel. Urine from a minimum of 5 animals of each genotype showed similar results.



Supplemental Figure 6. Alkaline Phosphatase (AP) expression in various lines used in the present study. (a) Z/Kim transgenic mice do not express AP in kidney. (b) Z/Kim; Podocin-Cre bigenic mice express AP in 55% of glomeruli (g) in a focal pattern. (c) Z/Kim; Six2-GC (Kim-$1^{REC\text{-}tg}$) express AP in a focal pattern in glomeruli and in 10 – 20% of cortical tubules. (d) Z/AP; Six2-GC bigenic mice express AP throughout glomeruli and nearly 100% of cortical tubules.