SUPPLEMENTARY METHOD

A chronic renal failure model consisting of unilateral ureteral obstruction (UUO) was performed in 10-12 week-old male hHCaRG Tg mice and non-Tg mice by double-ligating the left ureter using a 6-0 silk and cutting between the ligatures to prevent retrograde urinary tract infection after a low midline abdominal incision.[49,50] Sham-operated mice had their ureters exposed and manipulated but not ligated.

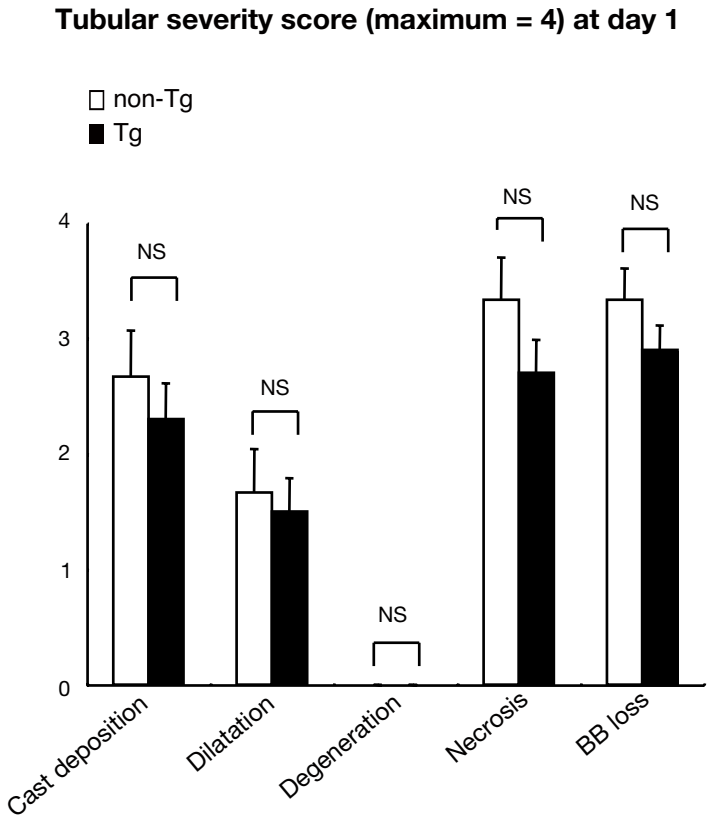
REFERENCES

49. Satoh M, Kashihara N, Yamasaki Y, Maruyama K, Okamoto K, Maeshima Y, Sugiyama H, Sugaya T, Murakami K, Makino H: Renal interstitial fibrosis is reduced in angiotensin II type 1a receptor-deficient mice. *J Am Soc Nephrol.* 12: 317-325, 2001
50. Yang J, Dai C, Liu Y. Hepatocyte growth factor gene therapy and angiotensin II blockade synergistically attenuate renal interstitial fibrosis in mice: *J Am Soc Nephrol*. 13: 2464-2477, 2002

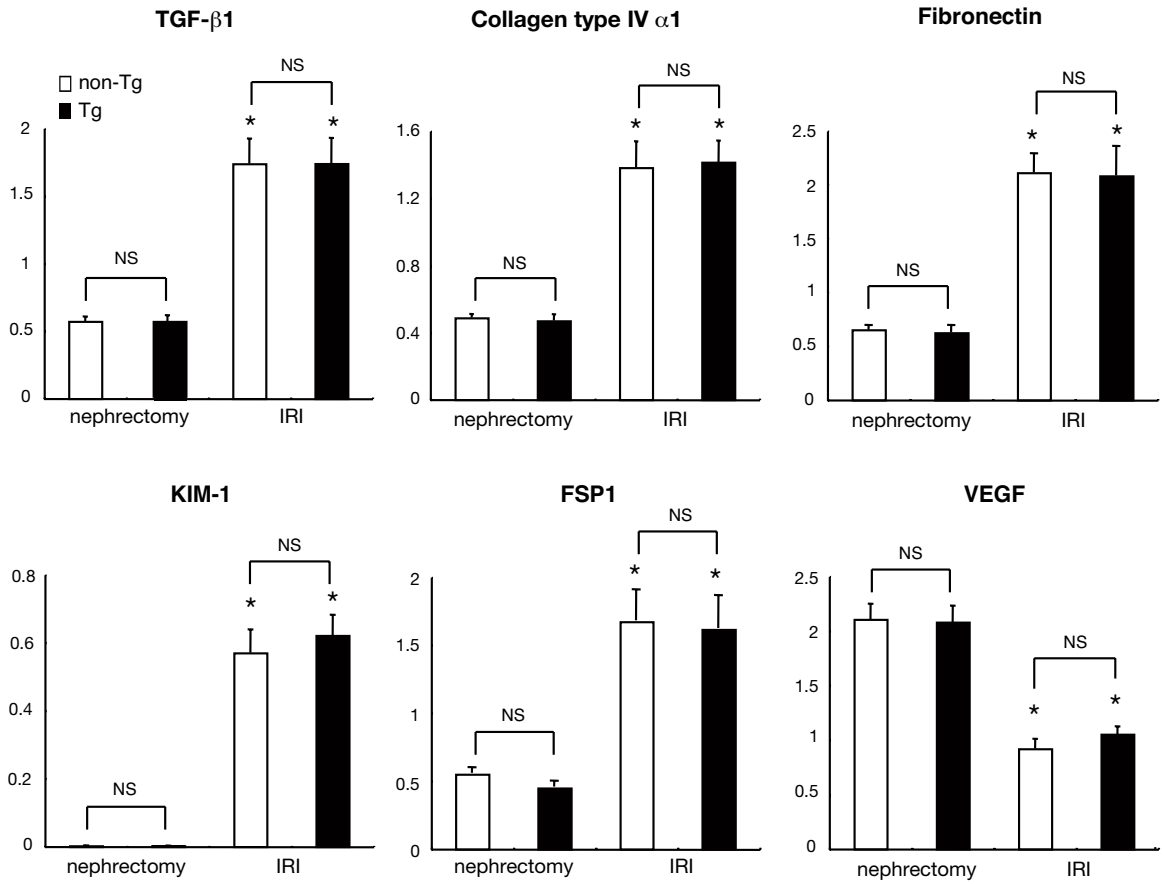
Supplementary Table 1. Baseline characteristics of 10-12-week-old non-Tg and Tg male mice

Parameter	Non-Tg mice	Tg mice
Body weight (g)	27.1 ± 2.2 (n = 40)	26.5 ± 2.1 (n = 40)
Mean arterial pressure (mmHg)	106.9 ± 3.5 (n = 11)	107.6 ± 7.6 (n = 12)
Urinary volume (ml/ day)	0.99 ± 0.45 (n = 11)	0.93 ± 0.4 (n = 16)
Plasma creatinine (μmol/l)	16.8 ± 1.5 (n = 6)	17.3 ± 1.6 (n = 6)
Plasma urine nitrogen (mmol/l)	8.5 ± 1.7 (n = 6)	10.8 ± 1.0 (n = 6)
Glomeruli size (μm)	70.2 ± 4.5 (n = 6)	70.7 ± 2.9 (n = 6)

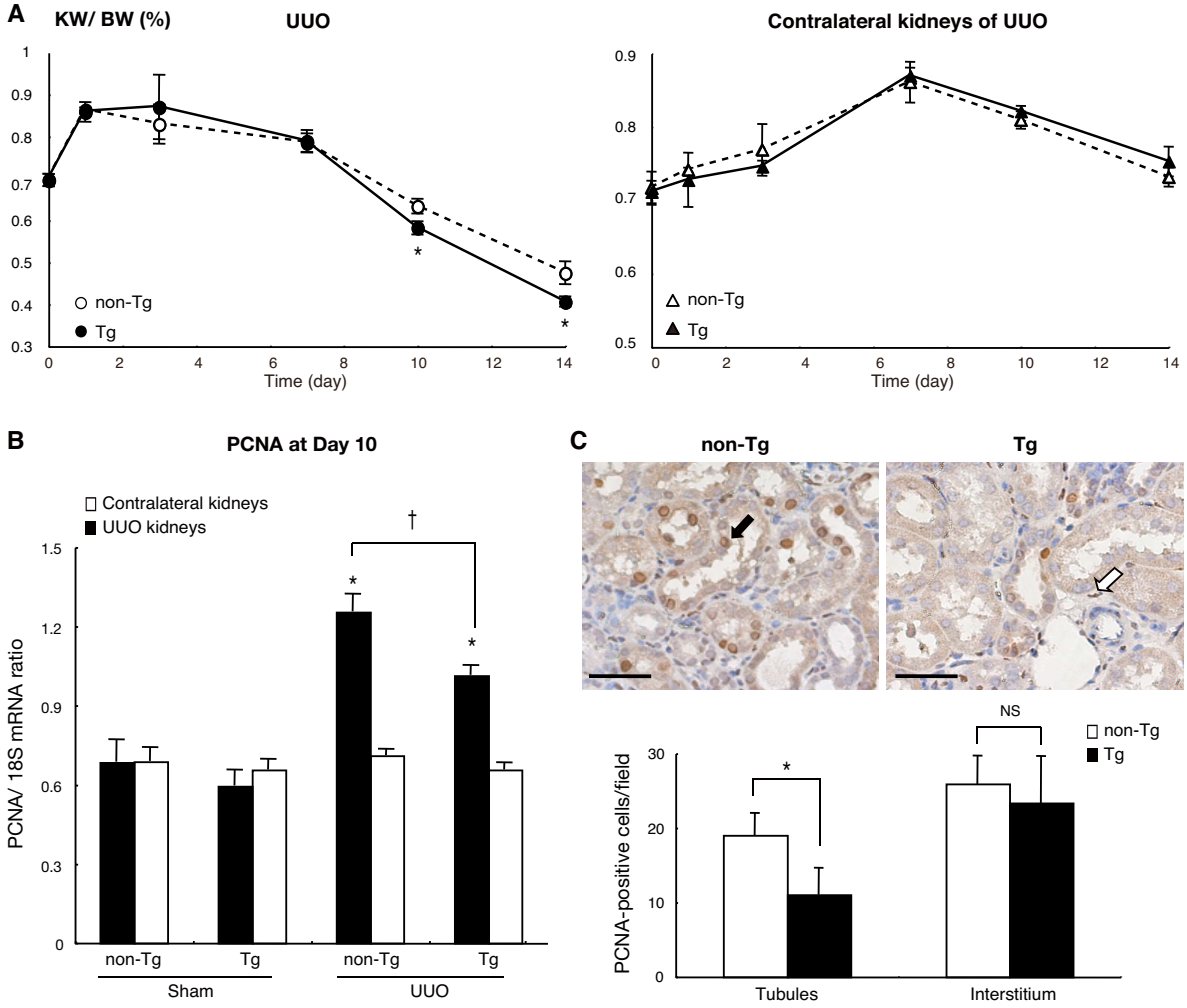
Data are shown as mean ± SD.



Supplementary Figure 1. Morphological damage scores one day after IRI. Tubular severity score according to cast deposition, tubular dilatation (Dilatation), tubular degeneration (Degeneration), tubular necrosis (Necrosis), and proximal tubular brush border loss (BB loss). IRI similarly increased the tubular severity score without degeneration in non-Tg and Tg mice. Tubular necrosis was slightly but not significantly ($P = 0.098$) more severe in non-Tg mice compared to Tg mice.



Supplementary Figure 2. Gene expression profiles at day 2 in post-ischemic kidneys. In each experiment, expression levels were normalized to the 18S ribosomal RNA expression. IRI caused increases of pro-fibrotic factors (TGF-β1, collagen type IV α1 and fibronectin), kidney injury molecule (KIM)-1 and fibroblast specific protein-1 (FSP1). Vascular endothelial growth factor (VEGF) was reduced in the post-ischemic kidneys. There was no effect of the hHCaRG transgene on the expression of these factors after nephrectomy and IRI. *$P < 0.01$ between IRI and nephrectomy.



Supplementary Figure 3. hHCaRG Tg mice showed lower tubular cell proliferation after UUO. (**A**) Changes in kidney weight (KW)/ body weight (BW) ratio after UUO. KW increased with hydronephrosis caused by ureteral obstruction up to 3 days (left panel). After 7 days, KW started to decrease and HCaRG caused a significantly (*P < 0.05) more rapid reduction of KW. Changes in contralateral KW were comparable between non-Tg and Tg mice (right panel). HCaRG did not reduce tubular dilatation and interstitial edema in UUO kidneys during the early phase and did not affect hypertrophy in contralateral kidneys. However, HCaRG reduced KW faster in Tg mice than in non-Tg mice during later phase. (**B**) UUO increased PCNA mRNA expression in the kidneys at day 10. The increase of PCNA was significantly (†P < 0.01) less in Tg mice. PCNA expression did not change in contralateral kidneys. *P < 0.01 between UUO and sham controls. (**C**) Localization of proliferating cells at day 10 after UUO. The number of PCNA-positive cells was counted in tubular and interstitial regions. The number of proliferating cells was significantly (*P < 0.05) lower in tubules of Tg mice than in non-Tg mice. HCaRG overexpression thus decreased KW by controlling PTEC proliferation, whereas it did not prevent edema and hypertrophy. The black arrow indicates PCNA-positive tubular cells. The white arrow indicates PCNA-positive interstitial cells. Scale bars: 50 μm.