

**Supplementary Figure 1. Renal STIM1 expression was increased in mice with UUU. Inhibition of STIM1 by siRNA prevented TGF- $\beta$ 1-induced intracellular increase of Ca<sup>2+</sup> in HK2 cells.** A: Immunoblotting showed increased STIM1 expression in the obstructed kidneys in mice with 7-day UUU. B and C: Suppression of STIM1 by siRNA inhibited increased intracellular Ca<sup>2+</sup> induced by TGF- $\beta$ 1. n=6.

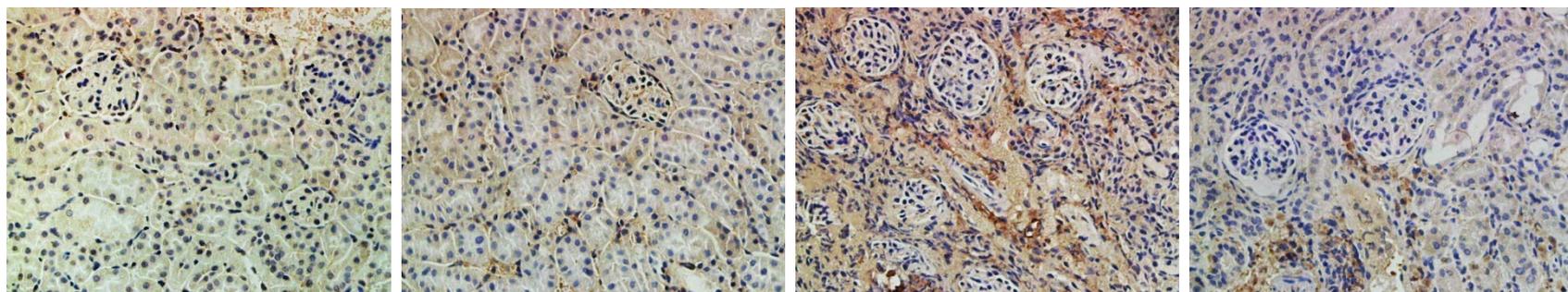
Ad-GFP shRNA

Ad-Orai1 shRNA

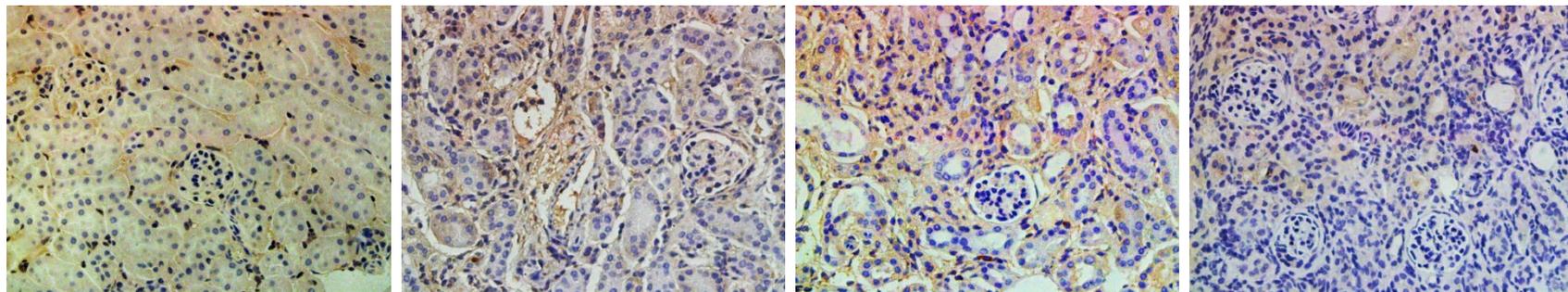
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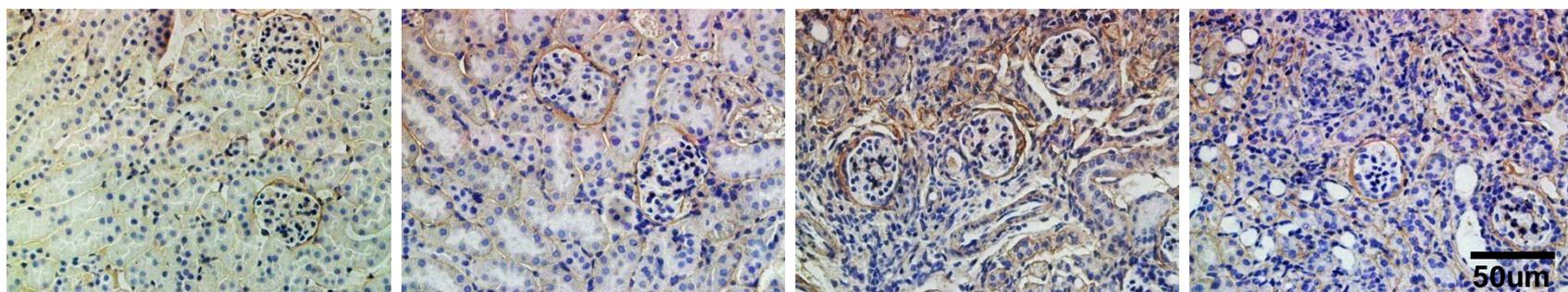
Col I



Col III



Col IV



**Supplementary Figure 2. Inhibition of Orai1 Ca<sup>2+</sup> channel by shRNA prevented increased renal expression of collagen I, III, and IV in mice with 14 day UUO.** Representative images of immunohistochemistry of collagen I, III, and IV in the kidneys from sham-operated, 14-day UUO mice treated with Ad-GFP shRNA or Ad-Orai1 shRNA.

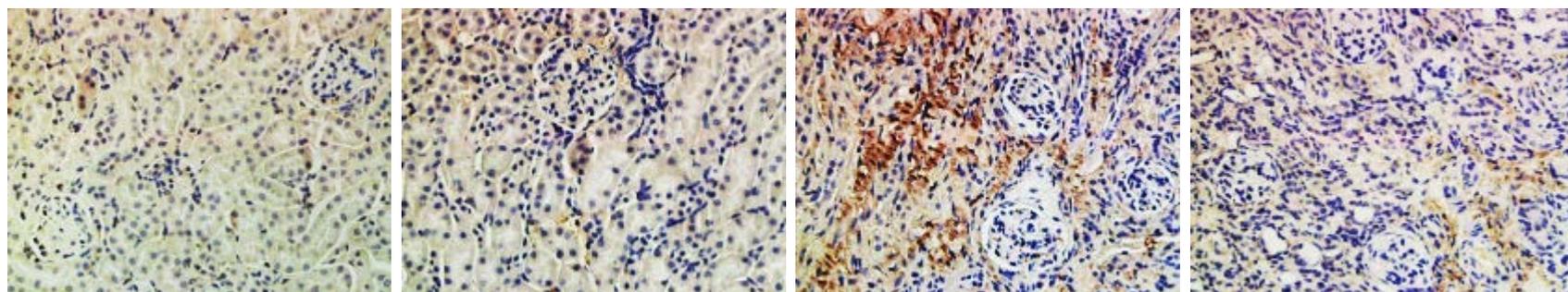
Vehicle

SKF96365

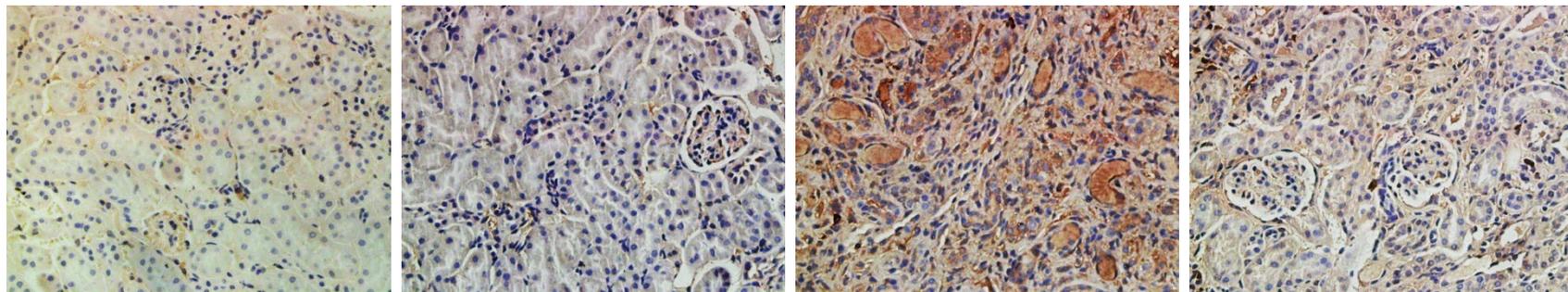
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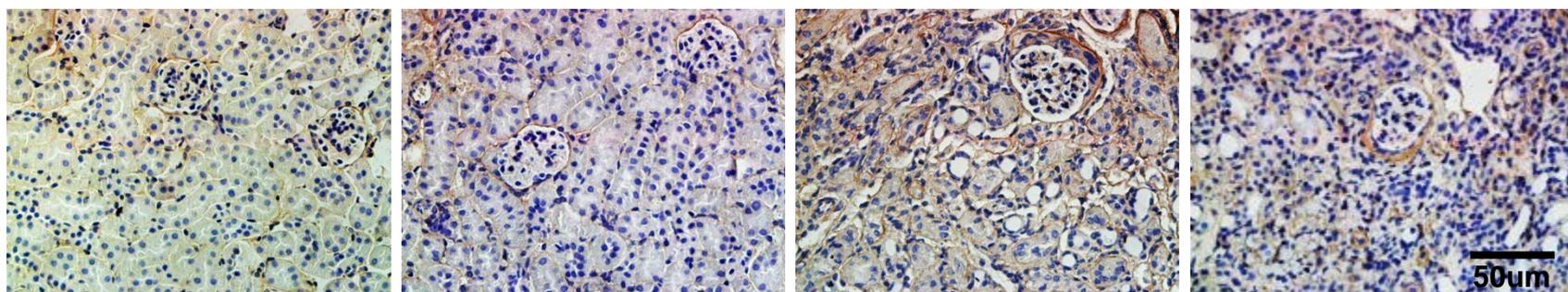
Col I



Col III



Col IV



**Supplementary Figure 3. Inhibition of Orai1 Ca<sup>2+</sup> channel SKF 96365 prevented increased renal expression of collagen I, III, and IV in mice with 14 day UUO.** Representative images of immunohistochemistry of collagen I, III, and IV in the kidneys from sham-operated, 14-day UUO mice treated with vehicle PBS or SOC channel blocker SKF96365.