SUPPLEMENTAL MATERIAL

Table E1. Cortical and Medullary MTR at baseline and after 2, 4, 6, weeks of RAS

	Baseline	2 Weeks	4 Weeks	6 Weeks
Sham Kidney				
Cortex	0.50 (0.49-0.52)	0.51 (0.50-0.52)	0.49 (0.48-0.50)	0.52 (0.48-0.54)
Medulla	0.50 (0.48-0.52)	0.50 (0.48-0.50)	0.47 (0.47-0.49)	0.50 (0.49-0.51)
Stenotic Kidney				
Cortex	0.51 (0.50-0.54)	0.56 (0.55-0.58)*†	0.58 (0.55-0.59)*†	0.58 (0.56-0.58)*†
Medulla	0.50 (0.48-0.51)	0.47 (0.45-0.47)*†	0.60 (0.57-0.62)*$†	0.60 (0.57-0.63)*$†
Contralateral Kidney				
Cortex	0.53 (0.52-0.56)	0.54 (0.52-0.58)	0.52 (0.51-0.53)$	0.52 (0.50-0.53)*$
Medulla	0.52 (0.50-0.55)	0.52 (0.51-0.54)	0.50 (0.48-0.52) $	0.50 (0.48-0.51)*$

Note.— Data are medians with interquartile ranges in parentheses. *P<0.05 compared to baseline, $P<0.05 compared to 2 weeks, †P<0.05 compared to sham. MTR=magnetization transfer ratio. RAS=renal artery stenosis.

Table E2. Cortical and Medullary R_2^* at baseline and after 2, 4, 6, weeks of RAS

	Baseline	2 Weeks	4 Weeks	6 Weeks
Sham Kidney				
Cortex	139 (130-142)	146 (128-160)	136 (130-161)	149 (134-160)
Medulla	136 (129-156)	151 (129-174)	147 (132-175)	155 (143-174)
Stenotic Kidney				
Cortex	140 (125-168)	177 (150-201)*†	193 (181-218)*†	210 (182-276)*$†
Medulla	131 (126-172)	106 (100-126)*†	190 (172-235)*$†	254 (173-325)*$†
Contralateral Kidney				
Cortex	137 (127-160)	139 (123-148)	157 (149-164)	138 (126-150)
Medulla	133 (130-138)	144 (125-158)	150 (142-160)	142 (118-159)

Note.— Data are medians with interquartile ranges in parentheses. *P<0.05 compared to baseline, $P<0.05 compared to 2 weeks, †P<0.05 compared to sham. RAS=renal artery stenosis.

Table E3. Interobserver Bias and Variation in Cortical and Medullary MTR at 6 weeks of RAS

	Sham Kidney	Stenotic Kidney	Contralateral Kidney
Cortex	0.15% (0.07%-0.57%)	1.08% (0.66%-1.33%)	0.28% (0.16%-0.50%)
Medulla	0.54% (0.43%-0.64%)	1.11% (0.62%-2.31%)	0.16% (0.08%-0.27%)

Note.— Data are medians with interquartile ranges in parentheses. MTR=magnetization transfer ratio, RAS=renal artery stenosis.

FIGURE LEGENDS

Figure E1: Representative MTR maps with the number of MT pulses at 1 **(a)**, 2 **(b)** and 3 **(c)** in mouse kidneys at 2 weeks of renal artery stenosis. Based on the collagen phantom study, the MT pulse irradiation-offset frequency and bandwidth were set at 1500Hz and 300Hz, respectively. The MT pulse power was empirically set at 10μT, which resulted in a flip-angle of 585°.

Figure E2: Renal Fibrosis in mice after 2 weeks of renal artery stenosis. Representative trichrome staining **(a)**, Sirius red staining viewed under polarized light **(b)** at a magnification of x10, and corresponding MTR map **(c)** of a stenotic kidney at 2 weeks of renal artery stenosis. Areas representing fibrosis and edema are marked by red and white arrows, respectively.

Figure E3: Spaghetti plots showing longitudinal changes in cortical **(a)** and medullary **(b)** MTR in the stenotic and sham kidneys.