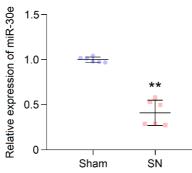




Supplemental Figure 1. SN rats gradually evolve into CKD. (A) Nephrectomized 2 rats exhibit a delayed body growth. \*P<0.05 and \*\*P<0.01 compared with values for 3 the sham indicated by the dashed line, by Two-tailed, unpaired Student's t test. Data are 4 shown as mean  $\pm$  SD. n = 5 or 6 rats per group. (B) Nephrectomy causes obvious 5 increase in serum creatinine. \*\*P<0.01 compared with values for the sham indicated by 6 the dashed line, by Two-tailed, unpaired Student's t test. Data are shown as mean  $\pm$  SD. 7 n = 5 or 6 rats per group. (C) Creatinine clearance rate indicates a marked decrease in 8 SN rats. \*\*P<0.01 compared with values for the sham indicated by the dashed line, by 9 Two-tailed, unpaired Student's *t* test. Data are shown as mean  $\pm$  SD. n = 5 or 6 rats per 10

1	group. (D) Nephrectomy causes obvious increase in serum creatinine urea nitrogen.
2	**P<0.01 compared with values for the sham indicated by the dashed line, by Two-
3	tailed, unpaired Student's <i>t</i> test. Data are shown as mean $\pm$ SD. n = 5 or 6 rats per group.
4	(E~F) Blood pressure shows a gradually increasing trend in nephrectomized rats.
5	**P<0.01 compared with values for the sham indicated by the dashed line, by Two-
6	tailed, unpaired Student's <i>t</i> test. Data are shown as mean $\pm$ SD. n = 5 or 6 rats per group.
7	(G) Representative histology of remnant kidney reveals a trend of gradual tubular
8	dilation and interstitial fibrosis in nephrectomized rats. (original magnification, ×100;
9	scale bar: 100 nm)
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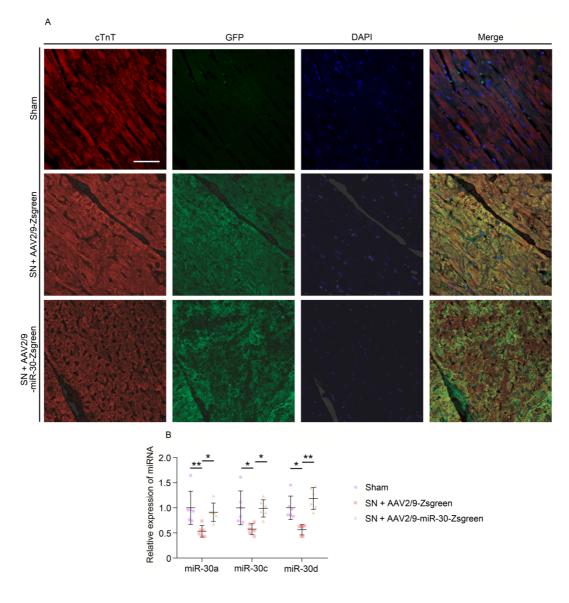
1	
2	Supplemental Figure 2. SN rats demonstrate cardiac miR-30e suppression at 5
3	weeks after nephrectomy. Expression levels are normalized by U6. **P<0.01
4	compared with values for the sham, by Two-tailed, unpaired Student's $t$ test. Data are
5	shown as mean $\pm$ SD. n = 6 rats per group.
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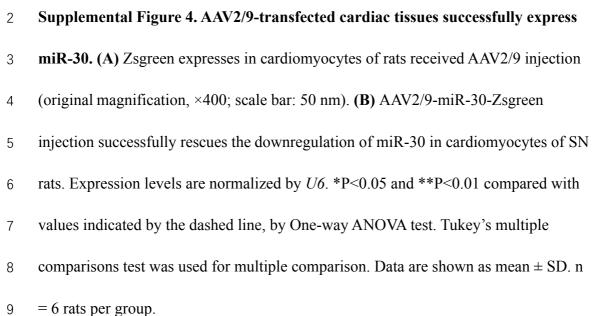
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ACAAATGGGCTTTCAGTCGGATGTTTGCAGCTGCCTACTGCCTCCAACTTCAAGGACTCGAG
AAV2/9-miR-30-Zsgreen ITR CTNT miR-30s CMV CMV Promoter Zsgreen WPRE TR
AAV2/9-Zsgreen ITR CTNT CMV CMV Enhancer promoter Zsgreen WPRE (ITR
ITR Inverted terminal repeat of AAV2 CTNT Cardiac troponin T promoter
WPRE Woodchuck hepatitis virus Polyadenylation site posttranscriptional regulatory element
Zsgreen Zoanthus sp. Green fluorescent protein

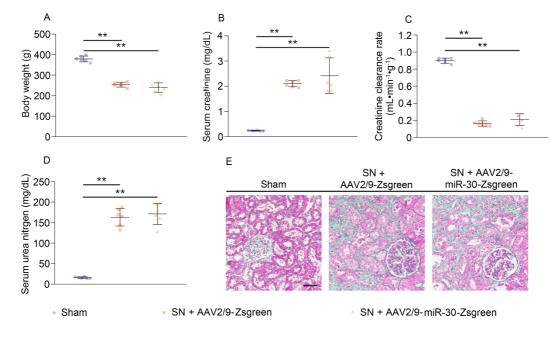
2 Supplemental Figure 3. The genome structure of AAV2/9. Alphabets with green

3 font, yellow font and red font represent pre-miR-30d, pre-miR-30c and pre-miR-30a,

- 4 respectively. Underlined letters among them mean mature miR-30d, miR-30c and
- 5 miR-30a.

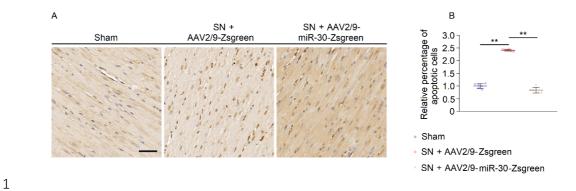


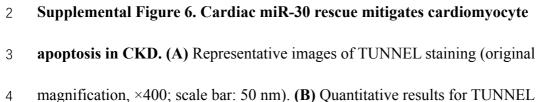




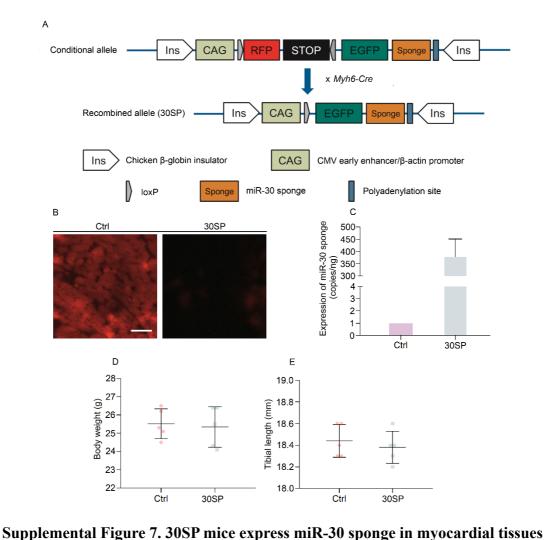
2 Supplemental Figure 5. AAV2/9 injection does not alternate CKD progression.

(A~D) AAV2/9 injection does not affect body weight reduction, serum creatinine
increment, creatinine clearance rate reduction and serum urea nitrogen increment in
SN rats. \*\*P<0.01 compared with values indicated by the dashed line, by One-way</li>
ANOVA test. Tukey's multiple comparisons test was used for multiple comparison.
Data are shown as mean ± SD. n = 6 rats per group. (E) No reduction in renal fibrosis
or morphology changed in nephrectomized groups after AAV2/9 injection (original
magnification, ×100; scale bar: 100 nm).

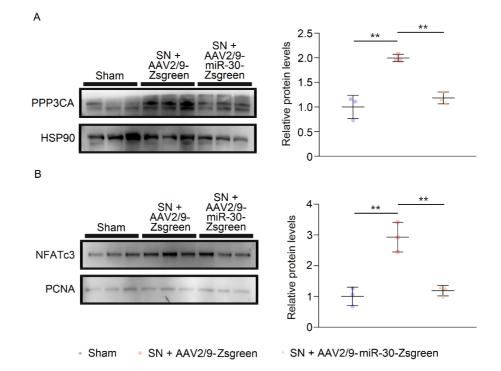




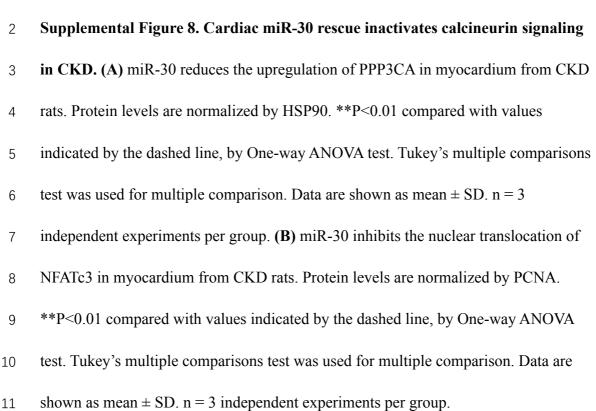
- 5 staining. **\*\***P<0.01 compared with values indicated by the dashed line, by One-way
- 6 ANOVA test. Tukey's multiple comparisons test was used for multiple comparison.
- 7 Data are shown as mean  $\pm$  SD. n = 6 rats per group.

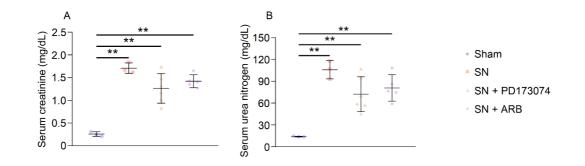


2 successfully. (A) The structure of the conditional miR-30 sponge transgene and the 3 product of recombination induced by Myh6-Cre, which leads to miR-30 sponge 4 expression in cardiomyocytes specifically. (B) Crossing the miR-30 sponge transgenic 5 mice with Myh6-Cre transgenic mice results in the loss of RFP expression in 6 cardiomyocytes (original magnification, ×100; scale bar: 100 nm). (C) miR-30 sponge 7 expression in the myocardial tissues from 30SP mice (mean  $\pm$  SD; n = 5 mice per 8 group). (D~E) No significant differences in body weight and tibial length between 9 30SP mice and ctrl mice. Compared with values for the ctrl, by Two-tailed, unpaired 10 Student's *t* test. Data are shown as mean  $\pm$  SD. n = 5 mice per group. 11

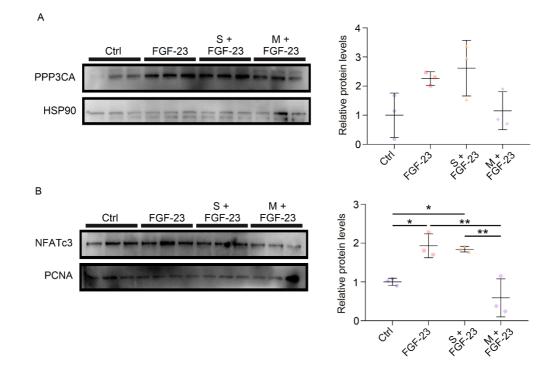




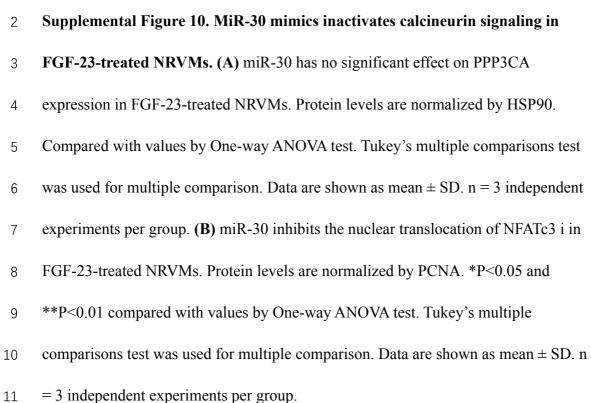


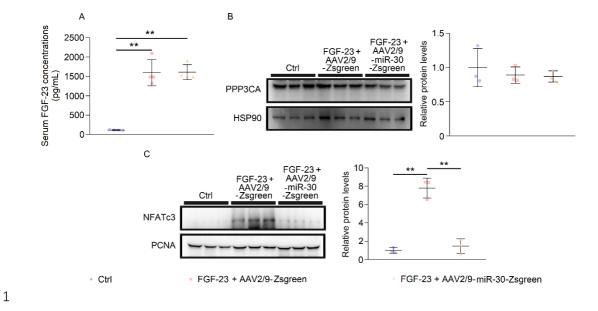


2	Supplemental Figure 9. PD173074 and ARB administration do not affect kidney
3	impairment in CKD. (A~B) PD173074 and ARB do not significantly affect serum
4	creatinine and urea nitrogen in SN rats. **P<0.01 compared with values indicated by
5	the dashed line, by One-way ANOVA test. Tukey's multiple comparisons test was
6	used for multiple comparison. Data are shown as mean $\pm$ SD. n = 3 to 6 rats per
7	group.
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2 Supplemental Figure 11. Cardiac miR-30 rescue inactivates Calcineurin

signaling in FGF-23-treated mice. (A) AAV2/9 injection does not affect circulating 3 levels of FGF-23 in FGF-23-treated mice. \*\*P<0.01 compared with values indicated 4 by the dashed line, by One-way ANOVA test. Tukey's multiple comparisons test was 5 6 used for multiple comparison. Data are shown as mean  $\pm$  SD. n = 4 mice per group. (B) MiR-30 rescue has no significant effect on cardiac PPP3CA expression in FGF-7 23-treated mice. Protein levels are normalized by HSP90. Compared with values by 8 9 One-way ANOVA test. Tukey's multiple comparisons test was used for multiple comparison. Data are shown as mean  $\pm$  SD. n = 3 independent experiments per group. 10 (C) MiR-30 recues inhibits the nuclear translocation of NFATc3 in myocardium from 11 FGF-23-treated mice. Protein levels are normalized by PCNA. \*\*P<0.01 compared 12 with values by One-way ANOVA test. Tukey's multiple comparisons test was used for 13 multiple comparison. Data are shown as mean  $\pm$  SD. n = 3 independent experiments 14 15 per group.

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