

5/6 nephrectomy rat model of CKD

Advanced surgical rat model of progressive chronic kidney disease and kidney failure.

5/6 nephrectomy rat model

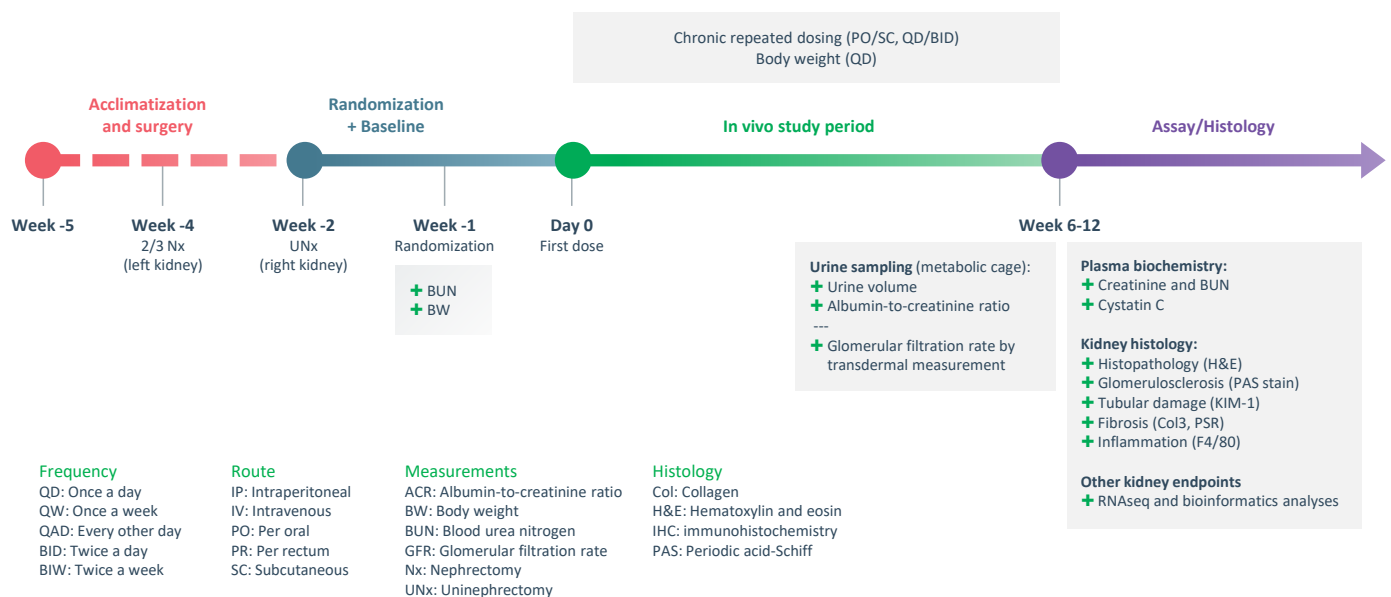
The 5/6 nephrectomy model in rat displays key manifestations of chronic kidney disease with progressive albuminuria and loss of kidney function. Histopathology features such as glomerulosclerosis and tubulointerstitial fibrosis are prominent findings in this advanced surgical model of progressive kidney failure.

Key model traits

- Surgical reduction of 5/6 of kidney mass.
- Progressive albuminuria and loss of kidney function.
- Pronounced glomerulosclerosis, tubular atrophy and tubulointerstitial fibrosis.
- Therapeutic evaluation of drug efficacy for 6-12 weeks.

Model induction	Surgical removal of 5/6 of kidney mass by unilateral nephrectomy and 2/3 nephrectomy
Strain	Male Sprague-Dawley and Wistar rat

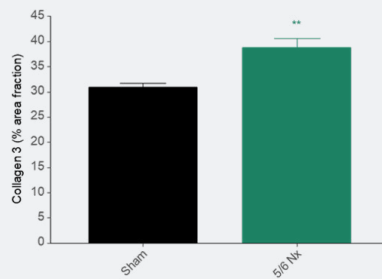
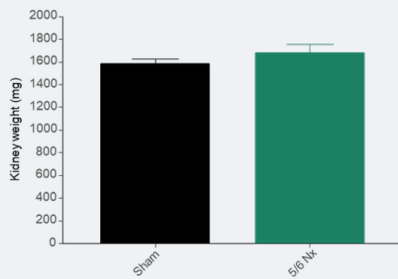
Study outline



Metabolic and biochemical characteristics

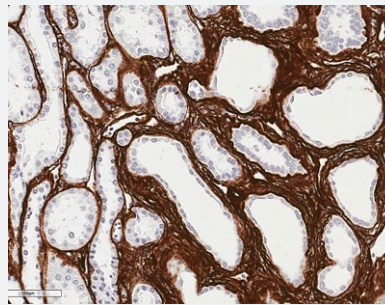
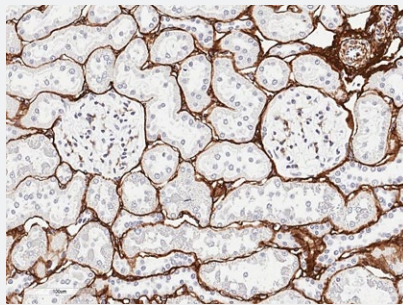
5/6 nephrectomised rats display urine and plasma markers of progressive kidney failure.

	Sham	5/6 Nx (10W)
Body weight (g)	537 ± 14	470 ± 9
Urine ACR (µg/mg)	519 ± 131	23,600 ± 6,230
Plasma BUN (mmol/L)	5.8 ± 0.3	14.4 ± 1.8
Plasma creatinine (µmol/L)	24.0 ± 1.4	72.0 ± 9.8



Tubulointerstitial fibrosis quantification

5/6 nephrectomised rats display compensatory hypertrophy of the kidney remnant and pronounced tubulointerstitial fibrosis as determined by morphometric quantification.



Collagen 3 staining (IHC) in kidneys from sham (left) and 5/6 Nx (right) rats.

Assessment and scoring of kidney pathology

5/6 nephrectomised rats show pathological features of chronic kidney disease as determined by scoring of histopathological changes in the kidney (top) compared to sham-operated (bottom) rat.

