Nephropathy Platform

- All-encompassing nephropathy models: acute kidney injury, chronic kidney disease, glomerulonephritis
- Comprehensive renal tissue bank and transcriptomics database
- Professional quantitative analysis in pathology

Well-Established Models in House

AKI Models
- Cisplatin induction
- LPS induction
- IRI
- B-IRI

CKD Models
- Renal hypertension
- 5/6 nephrectomy
- Adenine induction
- PAN induction
- Oxalate induction

Renal Fibrosis
- UUO
- Folic acid induction
- 5/6 nephrectomy
- Oxalate induction
- Adenine induction

Autoimmune and Inflammatory Nephropathy
- Passive Heymann nephritis
- SLE model
- IgA nephropathy model
- Anti-GBM nephritis

Diabetic Nephropathy
- db/db mice (spontaneous)
- db/db Uni-nephrectomy
- STZ+ Uni-nephrectomy

FSGS Models
- PAN induction
- Renal hypertension
- 5/6 nephrectomy

Renal Anemia
- 5/6 nephrectomy
- Adenine induction

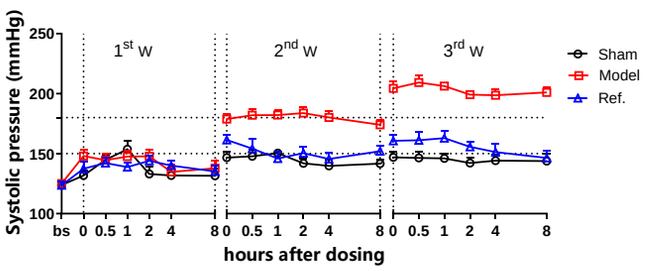
Minimal Change Diseases
- Doxorubicin induction
- PAN induction

Renal Calculi
- Oxalate induction
- Adenine induction

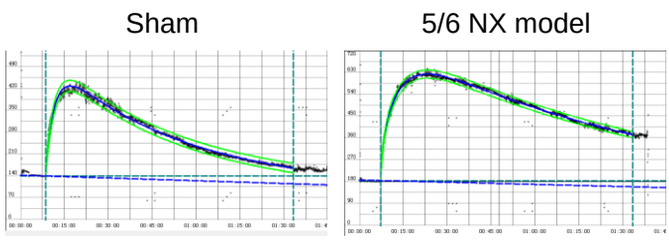
Other Models
- Hyperuricemia

Platform Capability

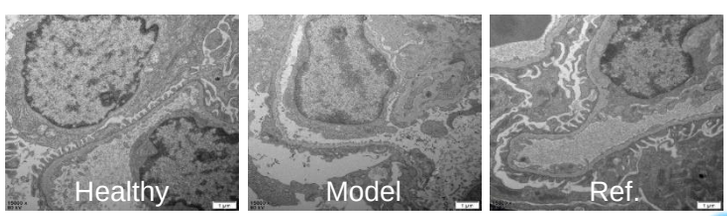
Noninvasive blood pressure monitoring system



Assessing renal function using glomerular filtration rate (GFR) monitors



Observing damage to the foot processes through electron microscopy



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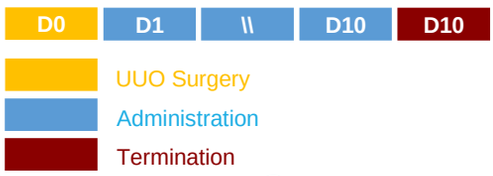
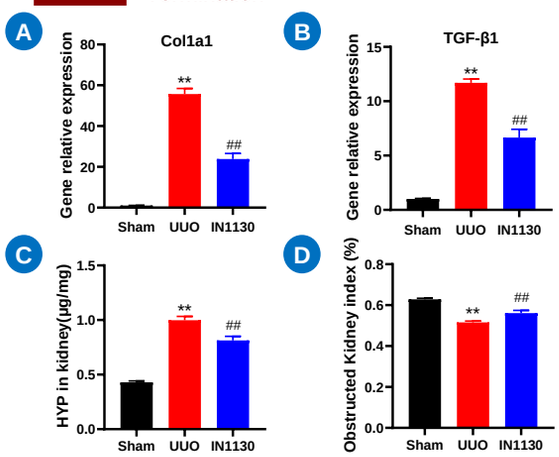
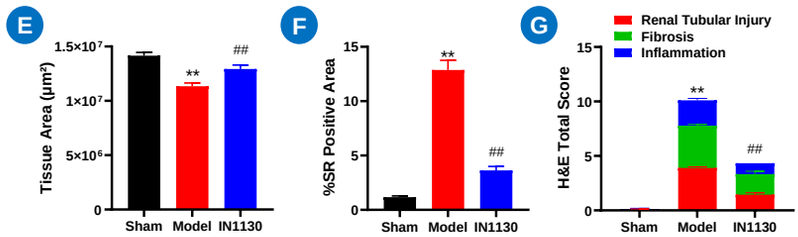
Renal Fibrosis

Procedure

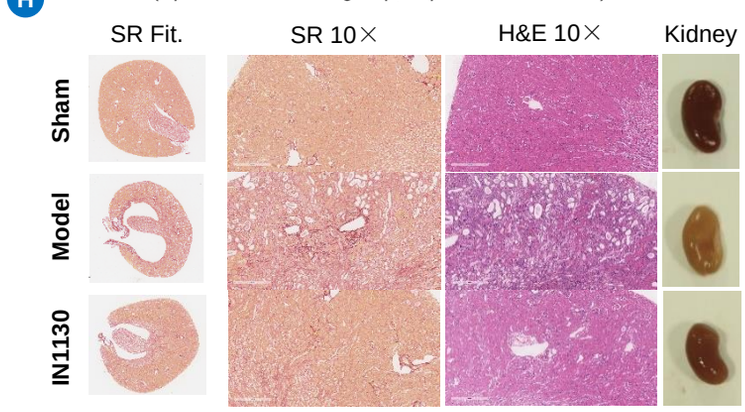
Animal: C57BL/6 mice, male







(**p<0.01 vs. Sham group, ##p<0.01 vs. Model.)

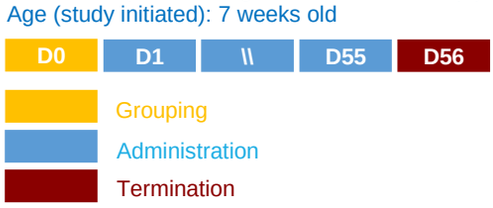


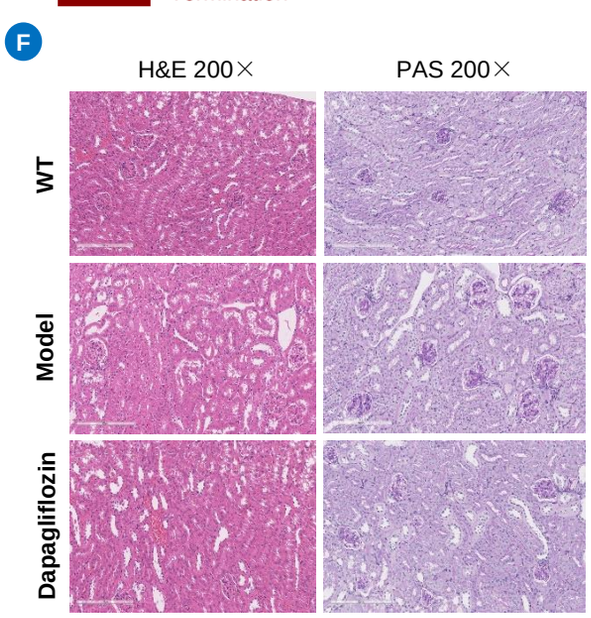
Evaluating the efficacy of the test compound in the UUO model. One side of the ureter was surgically obstructed, preventing urine from being expelled from the kidney and leading to renal fibrosis. The results showed that both the Sirius Red (SR) positive area and the semi-quantitative kidney injury score were significantly elevated in the model group, and were reduced by the positive compound IN1130 (F, G, H). The coefficient and tissue area of the obstructed kidney (SR staining) significantly decreased in the model group and were partially rescued in IN1130 group (D, E, H). Col1a1, TGF-β1 (detected by qPCR) and HYP (detected by ELISA) significantly increased in the obstructed kidney of the model group, and were downregulated by the positive compound IN1130 (A, B, C).

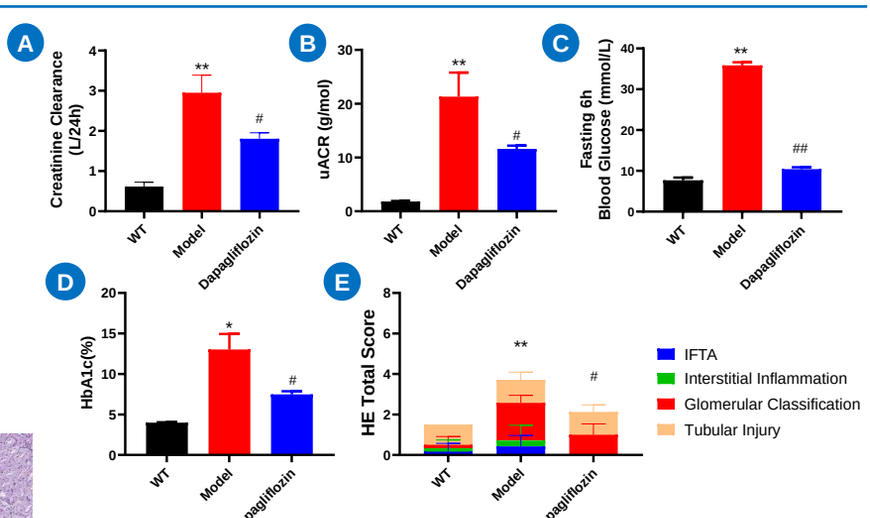
Diabetic Nephropathy

Procedure

Animal:
WT mice (strain background: C57BLKS/J)
db/db mice (strain background: C57BLKS/JGpt)
Age (study initiated): 7 weeks old







(*p<0.05,**p<0.01 vs. WT group, #p<0.05, ##p<0.01 vs. Model.)

Evaluating the efficacy of test compounds in the db/db mouse diabetic nephropathy model. The db/db mouse is a model of spontaneous type 2 diabetes, and with the progression of the disease, it will display features of diabetic nephropathy such as proteinuria and kidney injury. The results showed that the creatinine clearance rate of the kidney was significantly increased in the early stage of diabetic nephropathy (A); Blood glucose and glycated hemoglobin levels of db/db mice were significantly increased, and the positive drug was able to reduce the blood glucose levels of the model (C, D); As the disease progressed, the urine ACR (B) and semi-quantitative kidney injury score (H&E staining) (E, F) were significantly increased in the model group compared to the wild-type control mice, and the positive drug showed a trend to reduce urine ACR and injury scores.