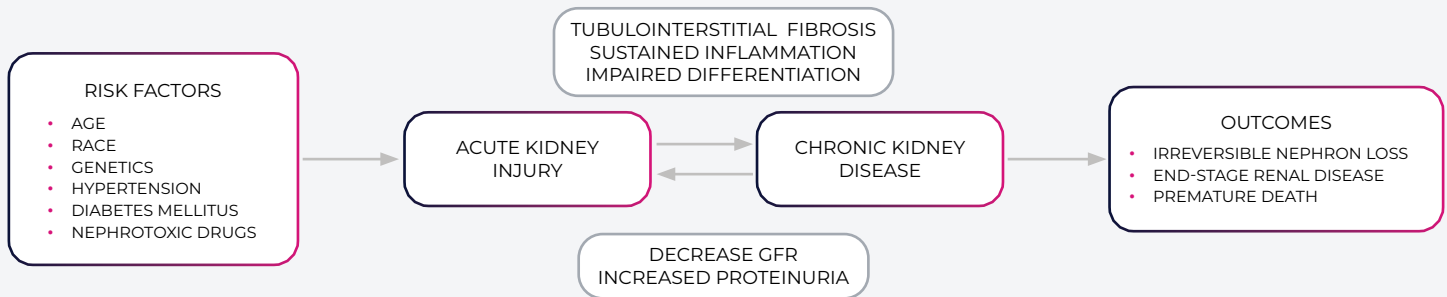




# UNILATERAL URETERAL OBSTRUCTION (UUO) MOUSE MODEL OF KIDNEY FIBROSIS

Chronic kidney disease (CKD) is a global health challenge that affects approximately 10-15% of the population in developed countries.

- The main histological characteristic of kidney failure is renal fibrosis diffused to the interstitium, the vessels and the glomerulus.
  - Excessive production of ECM leading to structural damage, impaired renal function, and eventually end-stage renal disease
- Acute kidney injury has been identified as a risk factor for CKD development and progression:



Fibrosis is common to all kidney diseases, independent of their primary cause, and is a key target of new drug treatments.

ChemPartner offers a robust UUO mouse model for your metabolic research, providing an efficient platform for the fast screening of drug candidates targeting renal fibrosis.

## STUDY OUTLINE

### UUO PRECLINICAL *IN VIVO* MOUSE MODEL



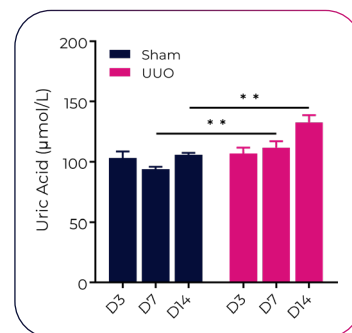
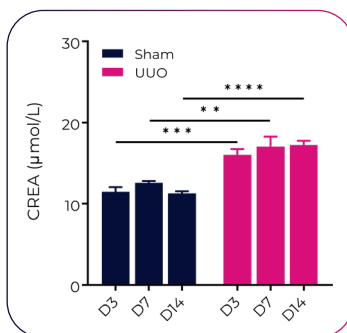
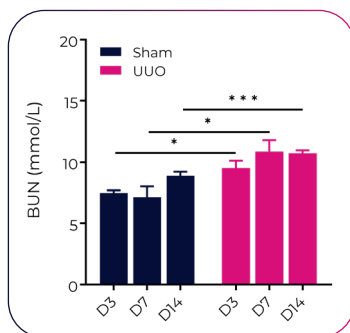
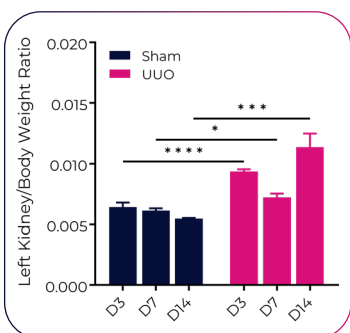
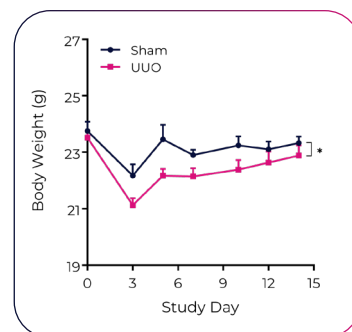
- Strain
  - Male C57BL/6 mice, 7 weeks on arrival
- Model
  - Permanent surgical unilateral left ureteral obstruction

### MAJOR READOUTS

- Body weight
- BUN, CREA, UA, and left kidney/body weight ratio
- H&E and Masson staining for tubular degeneration/atrophy score, tubular dilation score, interstitial inflammatory cell infiltration score and tubulointerstitial fibrosis

## KEY MODEL CHARACTERISTICS:

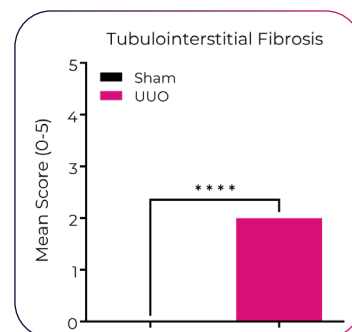
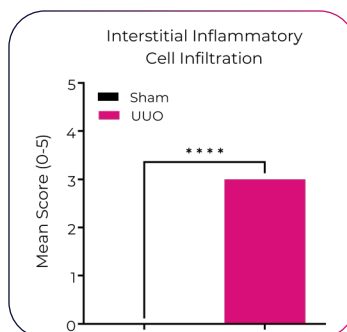
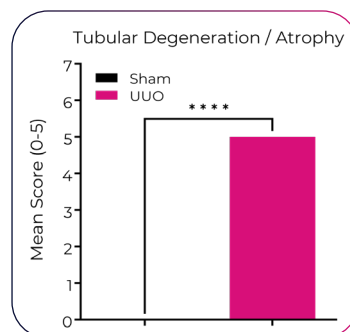
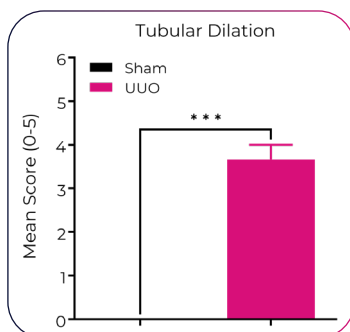
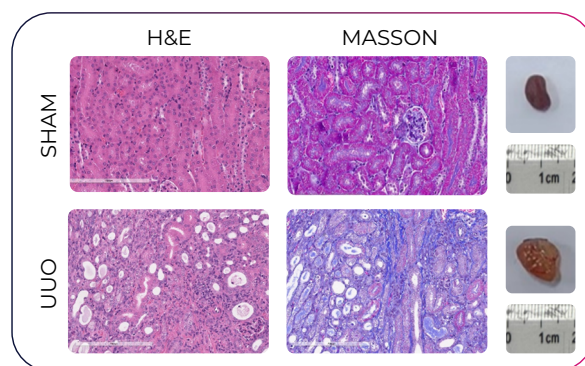
- ✓ Complete surgical obstruction of the left ureter
- ✓ 11-14 day dosing window
- ✓ Elevated blood urea nitrogen (BUN) from day 3 post-surgery
- ✓ Elevated blood creatinine levels from day 3 post-surgery
- ✓ Elevated uric acid levels from day 7 post-surgery
- ✓ Increased left kidney/body weight ratio from day 3 post-surgery



## HISTOPATHOLOGICAL FEATURES

UO surgically prepared mice have the following histopathological features:

- ✓ Significant tubular dilation of the kidney from day 3 post-surgery
- ✓ Significant tubular degeneration / atrophy from day 3 post-surgery
- ✓ Significant interstitial inflammatory cell infiltration from day 3 post-surgery
- ✓ Significant tubulointerstitial fibrosis from day 7 post-surgery



## SUMMARY

The utilization of cost-effective, clinically relevant *in vivo* models for studying kidney fibrosis will allow the rapid assessment of drug candidates and drug efficacy testing. The UO mouse model is a useful preclinical *in vivo* tool for evaluating anti-fibrotic drugs for kidney fibrosis; mimicking many of the biochemical and histopathological features of kidney fibrosis.

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