



Adriamycin (ADR)-induced nephropathy

AN *IN VIVO* MODEL FOR FOCAL SEGMENTAL GLOMERULOSCLEROSIS

Model

Focal segmental glomerulosclerosis (FSGS) refers to a unique morphologic/histological pattern characterized by sclerotic (fibrotic) lesions in glomeruli that are focal (less than 50% of all glomeruli affected on light microscopy) and segmental (less than 50% of the glomerular tuft affected). Podocyte injury in the earliest morphological feature of FSGS. Adriamycin (ADR) is a potent antineoplastic agent that induces podocyte injury. Its administration impairs renal function and induces histopathological lesions.

Specie

Rat

Interest

- ADR elicits glomerular changes similar to those found in human FSGS.
- Renal function is also affected consistent with the nephrotic syndrome and chronic kidney disease (CKD).

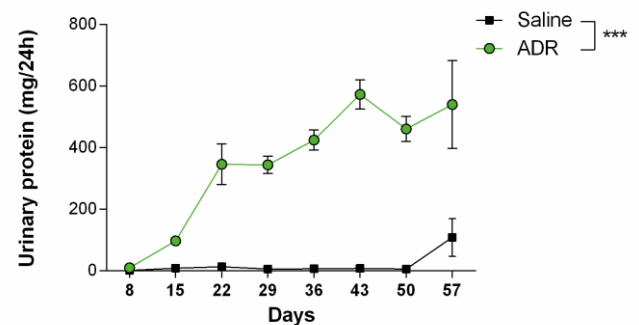
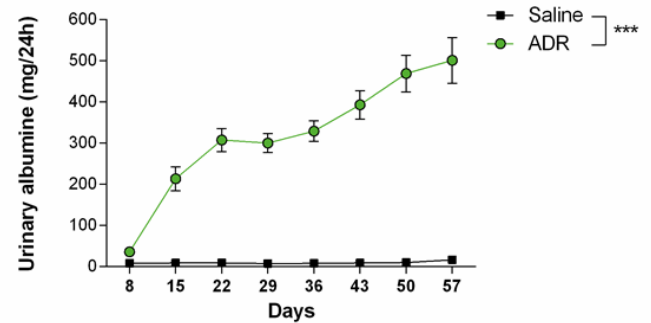
Model Description

- Nephropathy is induced by one single i.v. injection of ADR.
- Standard protocol duration: 8 weeks
- Weekly blood and urine collections
- Pathophysiological features: impaired renal function and histological changes

Evaluated Parameters

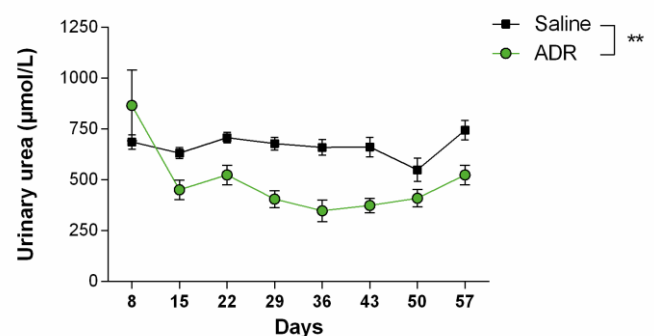
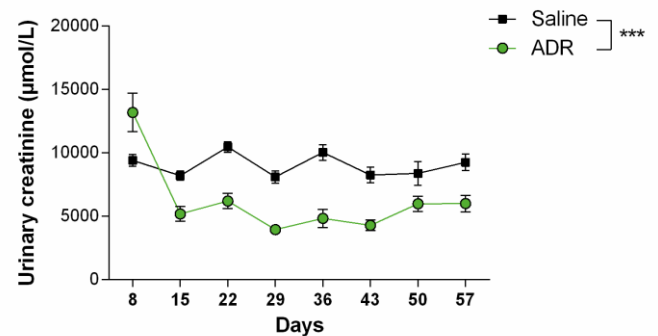
- Body and kidney weight
- Renal function:
 - Quantification of albuminuria and proteinuria
 - Biochemical dosage of plasma and urinary creatinine and urea
 - Estimated and transdermal Glomerular Filtration Rate (GFR).
- Glomerular injury: glomerulosclerosis scores and % of injured glomeruli on periodic acid-Schiff (PAS) stained kidney sections

Progressive albuminuria and proteinuria



*** P<0.001, (n=12/group)

Decrease of urinary excretion of creatinine and urea



P<0.01 and *P<0.001, (n=12/group)