

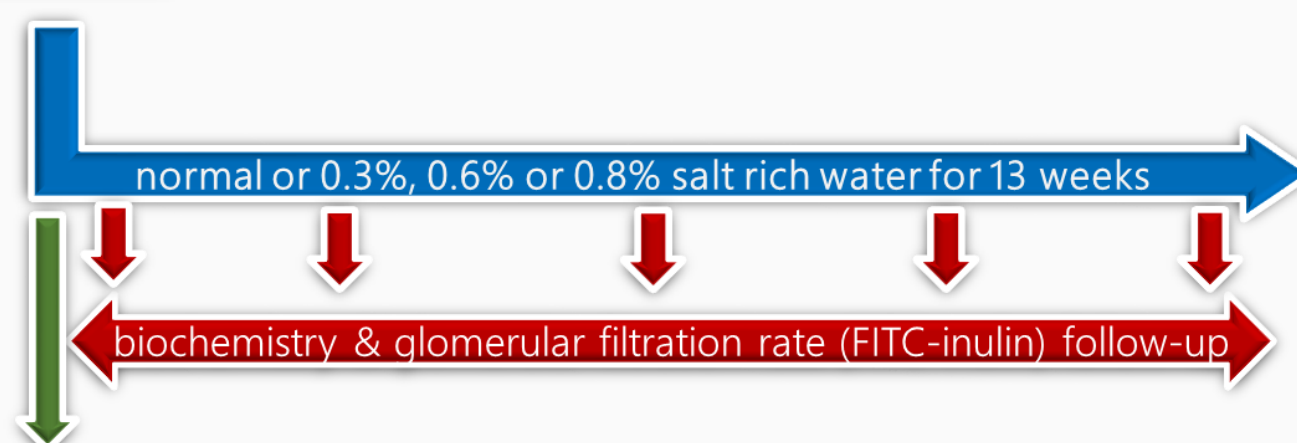
## BACKGROUND:

Evaluation of drugs targeting diabetic nephropathy (DN) requires diabetic animal models developing renal complications and alteration of glomerular filtration rate (GFR) in a short period of time. These models should exhibit hyperfiltration followed by a >50% GFR decline. The hypertensive, obese, Spontaneously Diabetic Torii (SDT) fatty rat develops kidney lesions and may serve as a relevant model for DN. To promote alteration of GFR, we here evaluated the effects of unilateral nephrectomy (Unx) and salt loading in SDT fatty rats.

## METHODS:

10-week old, male SDT fatty rats were included into 4 treatment groups (n=7/group): 1) normal water without Unx, 2) 0.3% salt water with Unx, 3) 0.6% salt water without Unx or 4) 0.8% salt water without Unx for 13 weeks. Plasma glucose, cholesterol, and triglycerides levels were measured using colorimetric assay kits. Glomerular Filtration rate was measured by i.v. injection of FITC-inulin. Data are shown as mean ± SD.

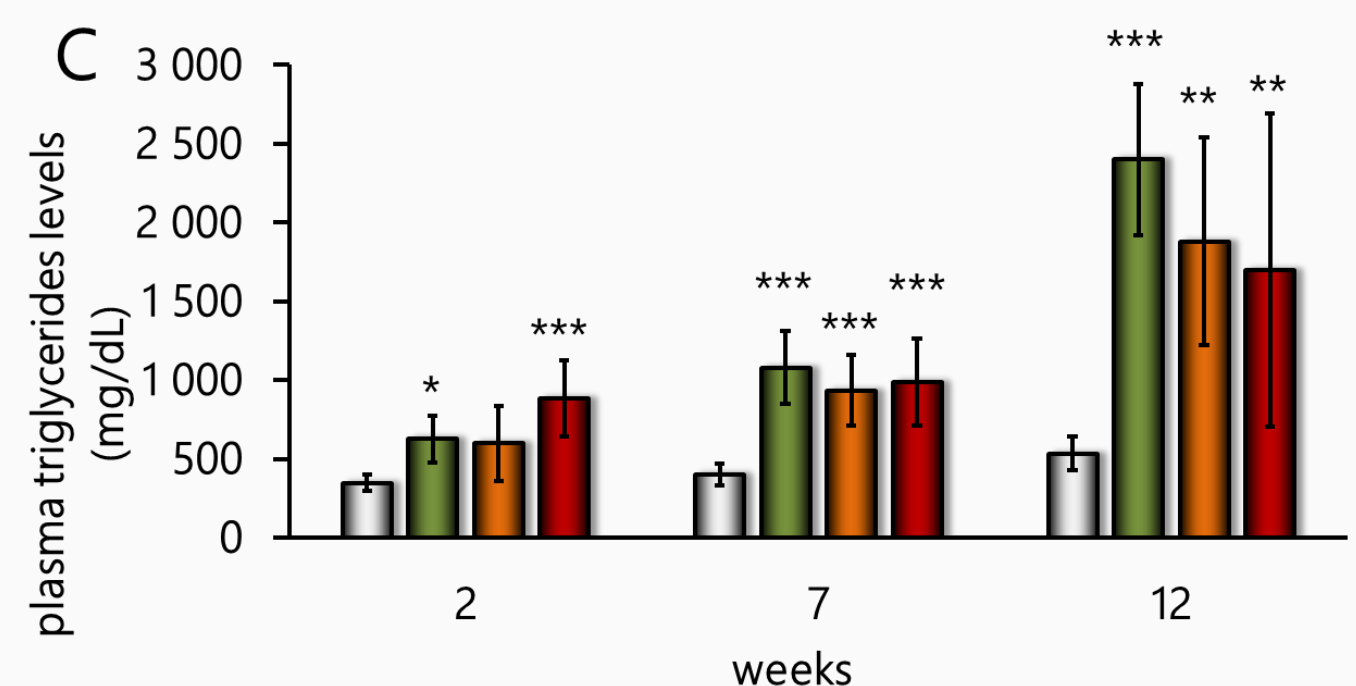
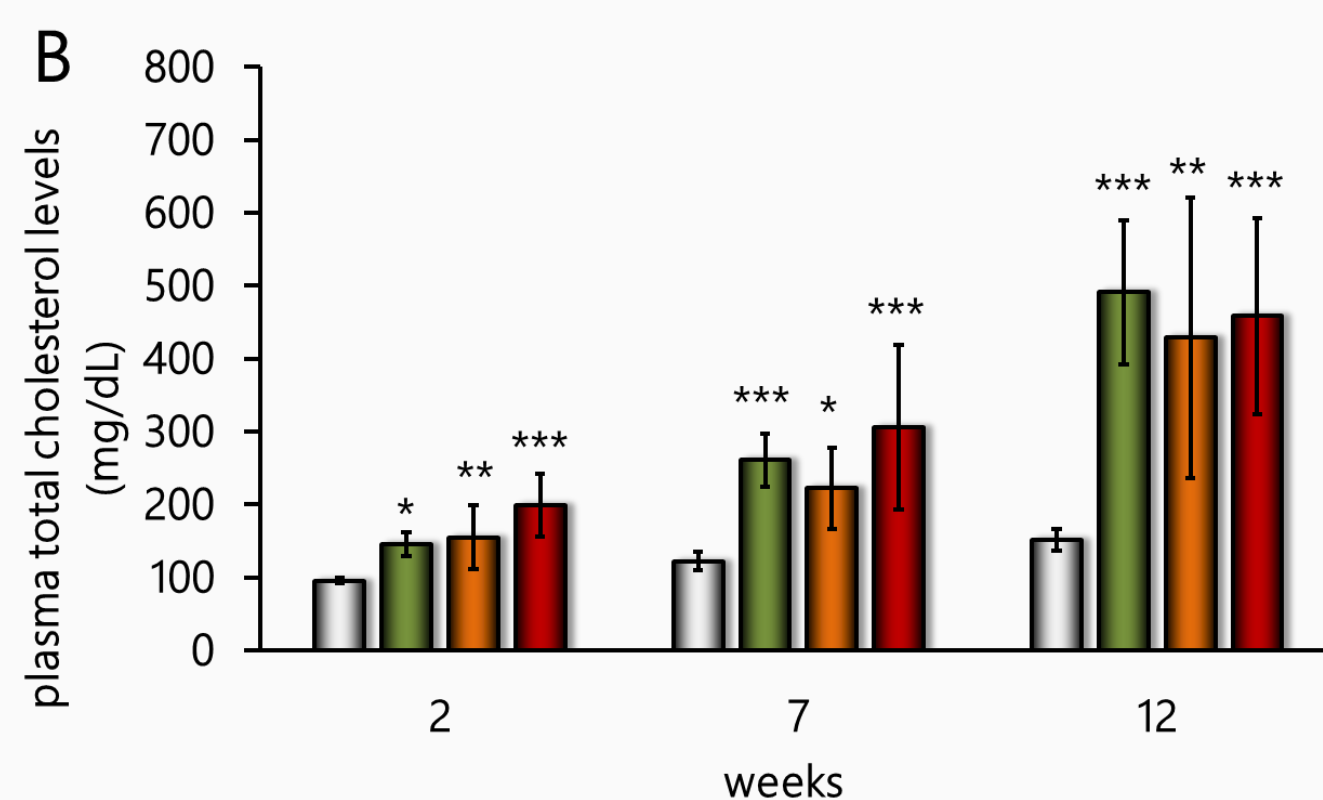
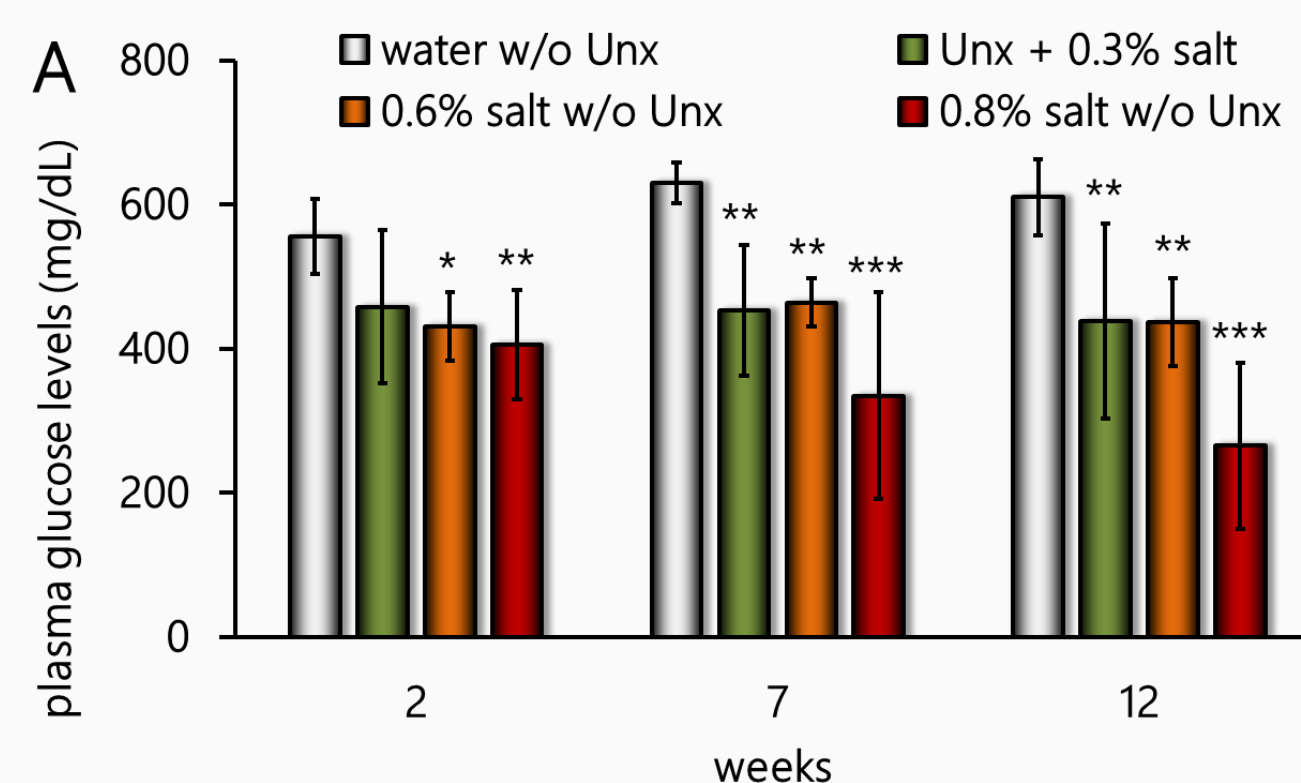
SDT fatty rats  
male, 10-week old



treatment groups (n=7/group):  
 • normal water w/o Unx  
 • 0.3% salt w/ Unx  
 • 0.6% salt w/o Unx  
 • 0.8% salt w/o Unx

## RESULTS:

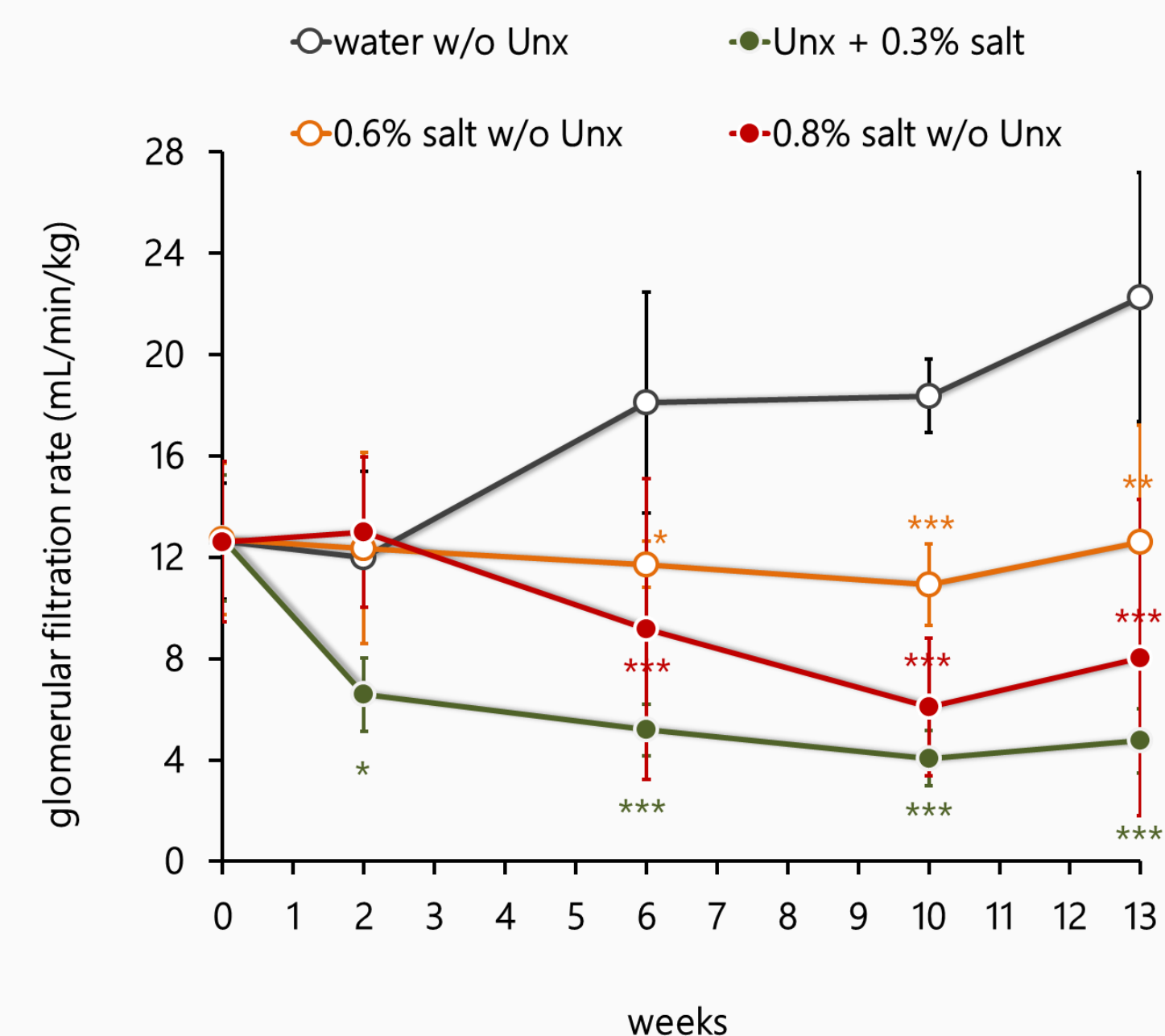
① Salt supplementation slightly attenuates hyperglycemia, but favors dyslipidemia in SDT fatty rats



Non-fasting blood glucose levels (A), plasma total cholesterol (B) and triglycerides (C) levels during the experimental period.

\* $p < 0.05$ , \*\* $p < 0.01$  and \*\*\* $p < 0.001$  vs. vehicle

② Salt supplementation and unilateral nephrectomy differentially alter glomerular filtration rate in SDT fatty rats



Glomerular filtration rate measured by FITC-inulin injection during the experimental period.

\* $p < 0.05$ , \*\* $p < 0.01$  and \*\*\* $p < 0.001$  vs. vehicle

## CONCLUSION

• In the SDT fatty rat, Unx and salt loading have limited effect on diabetic state, while it favors induction of dyslipidemia and differentially alter GFR.

• Depending on the experimental setting, this rat model should be helpful to evaluate the effects of drugs on hyperfiltration and GFR decline for the treatment of DN.