



VISCERAL PAIN IN ACUTE INFLAMMATORY CONDITIONS

A MODEL FOR PAIN IN INTERSTITIAL CYSTITIS / PAINFUL BLADDER SYNDROME

MODEL

Referred mechanical pain in an acute cystitis model (Von Frey test).

Cyclophosphamide-induced cystitis is a well-characterized model of subacute, inflammatory visceral pain in rodents. This preclinical model is usually associated with urinary bladder inflammation, an increase in voiding frequency and a decrease in urine volume per void as well as an increase in painful behaviors.

SPECIES

Rat

INTEREST

- This is a new acute model of inflammatory visceral pain, characterized by an increase in pain response (mechanical hyperalgesia) and a decrease in pain threshold (mechanical allodynia).
- Compounds that produce positive effects in this model include: non-steroidal anti-inflammatory drugs (aspirin and ibuprofen) and the opioid receptor agonist, morphine.

MODEL DESCRIPTION

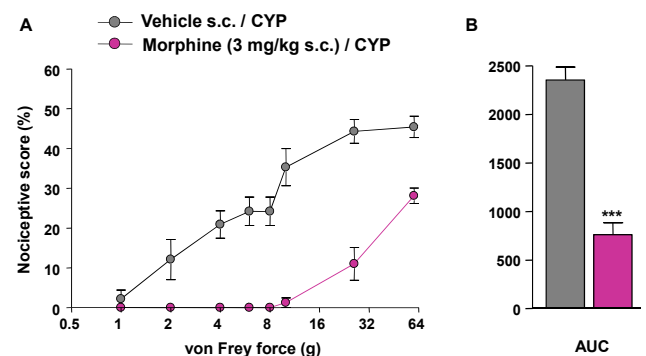
- The pelvic sensitivity to mechanical stimuli is assessed using von Frey filaments of different forces, applied to the pelvic area.
- A series of mechanical stimulations are performed at different time points after intraperitoneal injection of cyclophosphamide in conscious animals.
- Compounds can be administered *via* various routes (i.v., i.p., s.c., p.o.).

PARAMETERS EVALUATED

- Nociceptive threshold
- Percentage (%) of maximal nociceptive score
- Area under the curve (AUC) by plotting individual % of nociceptive score against von Frey force
- Others: inflammatory parameters, biomarker analysis

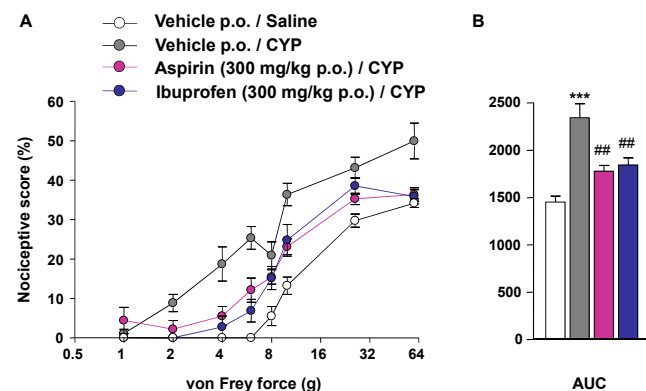
SCIENTIFIC PUBLICATIONS

- Cox PJ, *Biochem Pharmacol* **28**: 2045-2049, 1979
- Maggi CA et al, *J Auton Nerv Syst* **38**: 201-208, 1992
- Lanteri-Minet M et al, *Exp Brain Res* **105**: 220-232, 1995
- Boucher M et al, *J Urol* **164**: 203-208, 2000



Effects of morphine on (A) CYP-induced visceral nociception, and (B) corresponding area under the curve (AUC).

*** $p < 0.001$ versus vehicle s.c. (non parametric Mann Whitney t test)



Effects of aspirin and ibuprofen on (A) CYP-induced visceral nociception (B) corresponding area under the curve (AUC).

*** $p < 0.001$ versus saline, ## $p < 0.01$ versus vehicle p.o. (non parametric Mann Whitney t test)