



## SPINAL CORD INJURY-INDUCED DETRUSOR OVERACTIVITY

### A MODEL FOR NEUROGENIC OVERACTIVE BLADDER

#### MODEL

#### Cystometry in conscious rats following transection of the spinal cord (SCI).

In rodents, spinal cord injury induces an initial areflexic bladder which is followed by the emergence of spinal reflex mechanisms that mediate micturition.

Two types of cystometric profiles are observed (see figure) in accordance with the literature.

#### SPECIES

Rat, mouse

#### INTEREST

- This model is suitable for testing compounds for effects on C-fiber afferents and non-voiding contractions.
- Compounds that produce positive effects in this model include glutamate receptor antagonists, COX inhibitors, prostacyclin receptor antagonists and P2X<sub>3</sub> receptor antagonists.

#### MODEL DESCRIPTION

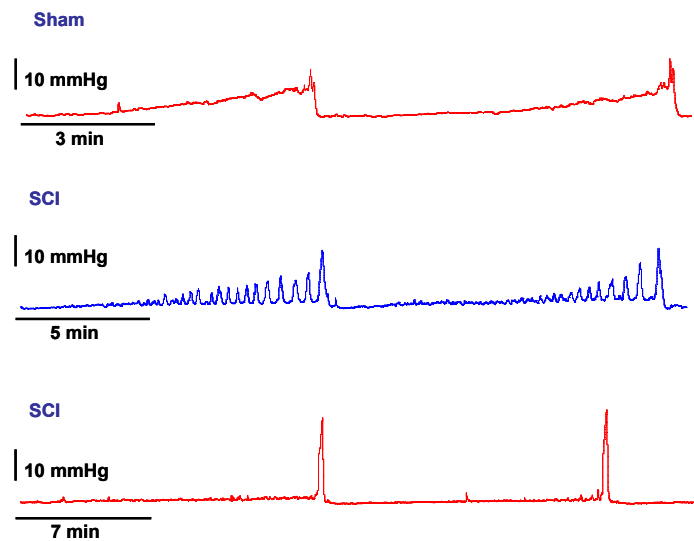
- Four-five weeks after SCI, cystomanometry is performed in restrained rats *via* continuous intravesical infusion of saline.
- Test compounds can be administered *via* various routes (i.v., i.p., p.o., i.g. or s.c.) and cystometric parameters evaluated up to two hours.

#### PARAMETERS EVALUATED

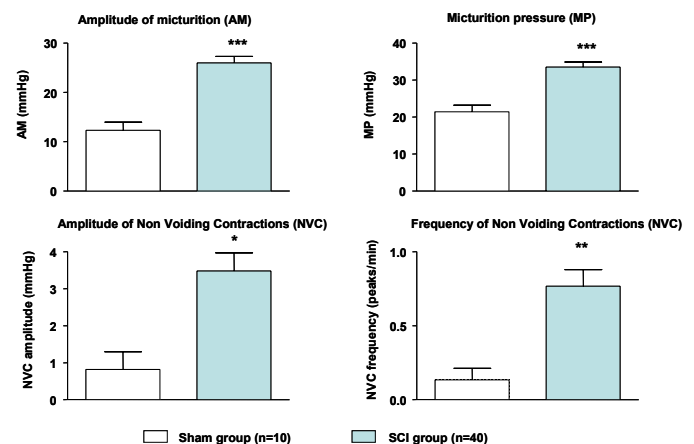
- Bladder capacity
- Micturition volume
- Amplitude of micturition
- Amplitude and frequency of non-voiding contractions
- Basal intravesical pressure
- Threshold pressure for micturition

#### SCIENTIFIC PUBLICATIONS

- Seki S et al, *J Urol* **171**: 478-482, 2004
- Yoshiyama M et al, *Expr Neurol* **159**: 250-57, 1999
- Khera M et al, *BJU Int* **99**: 442-46, 2007
- Lu S.H et al, *J Chin Med Assoc* **70**: 439-44, 2007



Cystometric profiles in conscious female rats: comparison of sham-operated and SCI rats.



\* P<0.05, \*\*P<0.01, \*\*\* P<0.001 unpaired Student t-test

#### Effect of Spinal Cord Injury (SCI) on cystometric parameters in conscious female rats.