



## CYCLOPHOSPHAMIDE-INDUCED HYPERACTIVE BLADDER MODEL

### A MODEL OF PAINFUL BLADDER SYNDROME (INTERSTITIAL CYSTITIS)

#### MODEL

##### Cystometry in conscious animals after cyclophosphamide treatment.

Cyclophosphamide treatment in rodents produces bladder inflammation and disruption of the urothelium resulting in abdominal pain and bladder overactivity.

#### SPECIES

Rat, mouse, guinea-pig

#### INTEREST

- This model is suitable for testing compounds for effects on the increased frequency and decreased bladder capacity associated with painful bladder syndrome/interstitial cystitis.
- Compounds that show a positive response in this model include aspirin, COX inhibitors and bradykinin B2 receptor antagonists.

#### MODEL DESCRIPTION

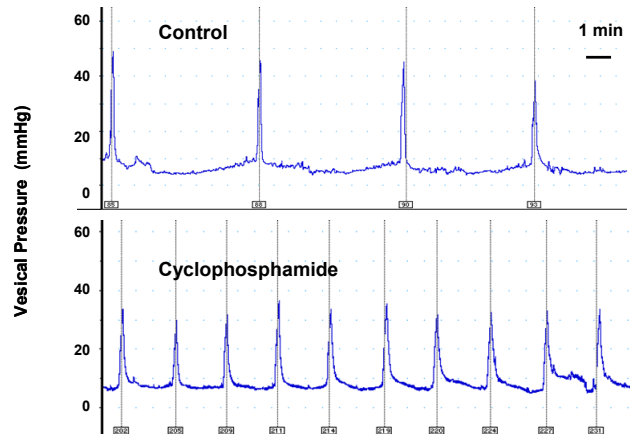
- Cystometry in restraining or metabolic cages is performed in conscious animals 24 hours after intraperitoneal injection of cyclophosphamide.
- Test compounds can be administered *via* various routes (i.v., i.p., p.o., s.c., i.g. or by osmotic pumps) and cystometric parameters evaluated for up to two hours post-administration.

#### PARAMETERS EVALUATED

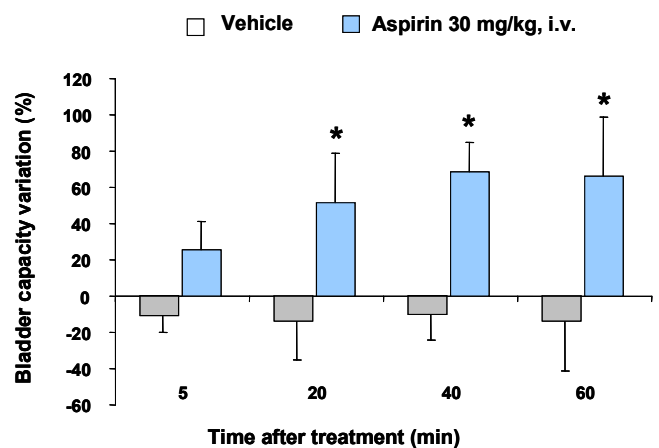
- Bladder capacity
- Intercontraction intervals during cystometry
- Micturition pressure
- Micturition volume
- Basal intravesical pressure
- Threshold pressure for micturition

#### SCIENTIFIC PUBLICATIONS

- Méen M et al, *Eur J Pain* **6**: 307-14, 2002
- Wood R et al, *J Urol* **165**: 653-59, 2001
- Lecci A et al, *Br J Pharmacol* **130**: 331-38, 2000
- Maggi CA et al, *N S Arch Pharmacol* **347**: 432-37, 1993



Typical cystometric recording in conscious rats treated with cyclophosphamide (150 mg/kg i.p.) or vehicle.



\* P < 0.05 vs vehicle, two-way ANOVA followed by Newman-Keuls test

High dose aspirin reverses the reduction in bladder capacity produced by cyclophosphamide.