

Capsaicin acts on sensory nerves via vanilloid receptors. TRPV1 has been extensively studied with respect to functional lower urinary tract (LUT) conditions in rodents and humans. The use of acute intravesical capsaicin instillation (AICI) in rodents to mimic various LUT disorders in which capsaicin sensitive C-fibers are involved is relevant when studying non-neurogenic overactive bladder/detrusor overactivity (OAB/DO), neurogenic DO (NDO), interstitial cystitis/painful bladder syndrome (IC/PBS) and bladder outlet obstruction (BOO)/BPH (see review Andersson et al. 2022).

Pathophysiological features

- Cystometrogram displays (figure 1).
 - a decrease in the intercontraction interval (figures 2A&B).
 - a decrease in the pressure threshold for eliciting contractions.
- Increase C-Fos positive cells in the spinal cord at L6 level.

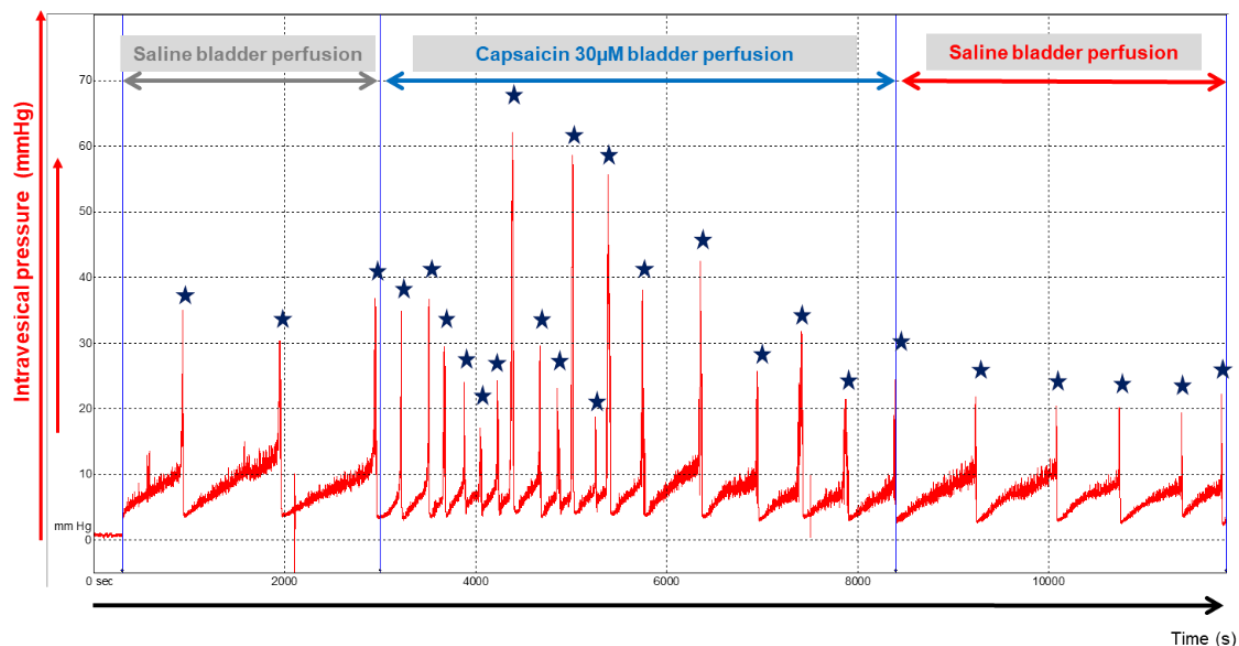


Figure 1: Representative cystometrogram showing the effect of capsaicin-induced bladder hyperactivity (at 30µM) in an anesthetized female rat. Stars indicate the voiding contractions. (Pelvipharm, internal data)

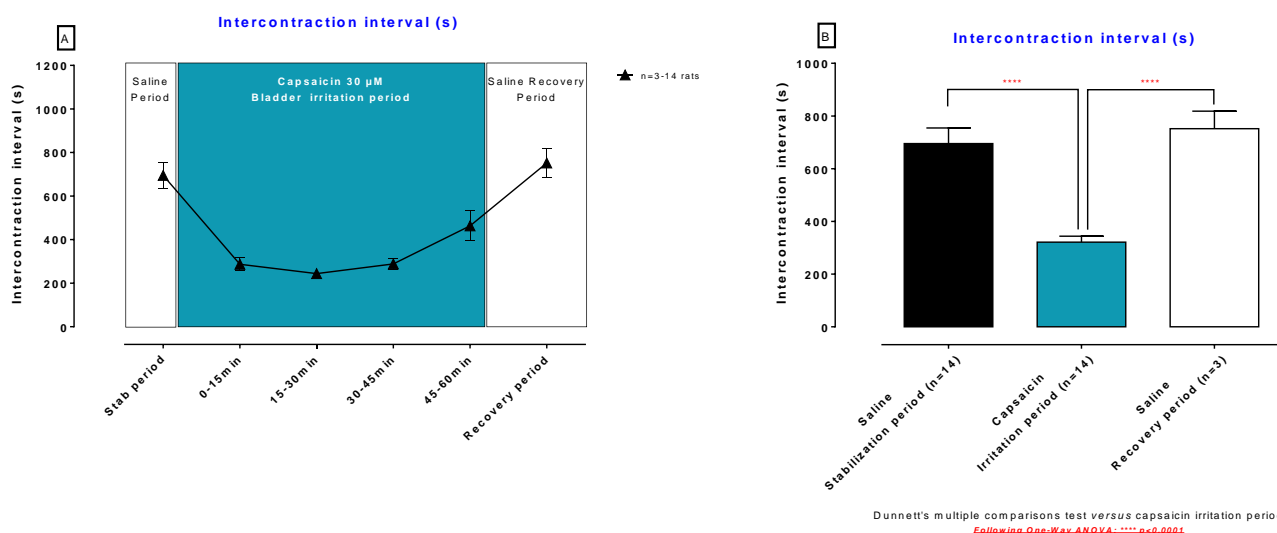


Figure 2: Representative urodynamic results on intercontraction interval parameter represented as A) a line or B) column bar graphs, during saline stabilization, capsaicin perfusion and saline perfusion recovery periods in anesthetized female rats. (Pelvipharm, internal data).

Related Pelvipharm bibliography:

Caremél R *et al.* **Eur Urol** (2010);58(4):616-25.
Andersson KE *et al.* **Med Sci** (2022)10;10(3):50.

NB: Pelvipharm will gladly study the feasibility to fit this experimental model to its client's needs.