Capsaicin-induced bladder hyperactivity

Model's advantages:

- Capsaicin is a selective excitotoxin of C-fiber primary afferent neurons.
- Acts through the stimulation of a vanilloid receptor (VR1).
- Release of tachykinins and other mediators at both the peripheral and spinal cord level.
- Useful for quick investigation of the effect of drugs known to act on C-fiber afferents.

Species: rat, guinea pig

Pathophysiological features:

- Cystometrogram displays:
  - decrease in the intercontraction interval.
  - decrease in the pressure threshold for eliciting contractions.
- Increase C-Fos positive cells in the spinal cord (L6 level).

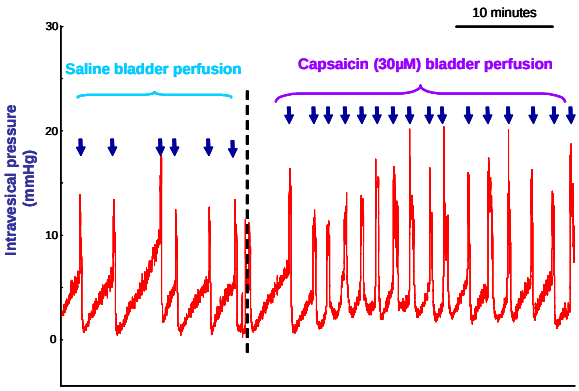

Figure 1: Representative cystometrograms showing the effect of capsaicin-induced bladder hyperactivity in anesthetized female rat. Arrows indicate the voiding contractions. (Pelvipharm, internal data)

Summarized methodology:

The bladder is perfused with continuous capsaicin (30 µM) at a rate of 50 µl/min while intravesical and blood pressure are monitored concomitantly.

Related Pelvipharm bibliography:

Caremel, R. et al. **Eur Urol** (2010) : 58(4):616-25

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

Links to applicable experimental skills:

- **Administration routes / regimen**
- **Plasma / urine / tissue collection**
- **In vivo experiments – anesthetized animals**
  - * Urodynamic evaluation (anesthetized)
  - * Bladder blood flow
  - * Neural firing recording
- **Biochemistry (Plasma / Urine / Tissue)**
  - * Spectrophotometric assays
  - * Protein expression and activity
- **Histology**
  - * Histomorphology
  - * Histomorphometry
  - * Oxydative fuorescence
- **Immunohistology / Confocal microscopy**
  - * Protein expression – immunohistochemistry / immunofluorescence
  - * Confocal microscopy