Acetic acid evoked bladder irritation

Model's advantages:

- Evokes bladder irritant responses, in particular through C-fibers
- Mimics the increased sensory activity, which occurs in overactive bladder and urge incontinence
- Useful for quick investigation of the effect of drugs known to act on either C-fiber afferents or bladder smooth muscle

Species: rat, guinea pig

Pathophysiological features:

- Cystometrogram displays:
  Increase in micturition pressure,
  Increase in micturition frequency
  Decrease in pressure threshold to evoke a bladder contraction
  Decrease in bladder capacity and voided volume
  Reduction in bladder compliance,
- Increase C-Fos positive cells in the spinal cord (L6 level)

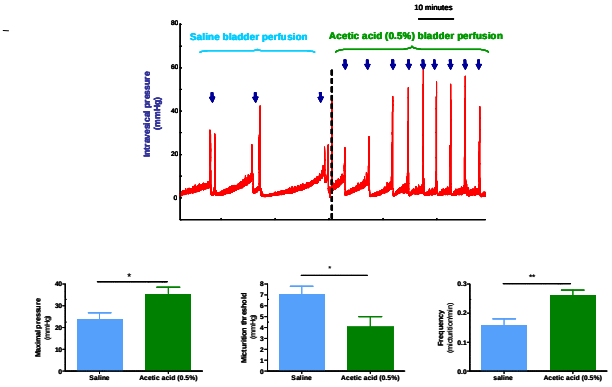

Figure 1: Representative cystometrograms showing the effect of acetic acid-induced bladder hyperactivity in anesthetized female rat. Arrows indicate the voiding contractions. (Pelvipharm, internal data)

- Guinea pig are usually used for acetic acid-induced bladder hyperactivity experiments because they display very stable and reproducible micturition cycles allowing the obtention of very reliable experiments

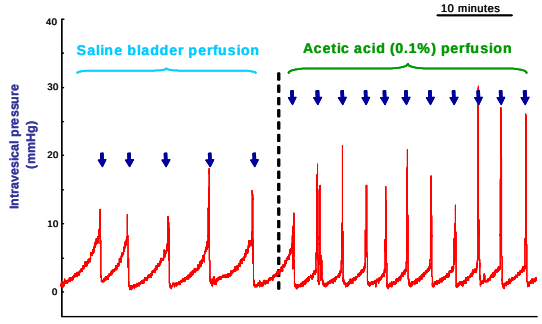

Figure 2: Representative cystometrograms showing the effect of acetic acid-induced bladder hyperactivity in anesthetized female guinea pig. Arrows indicate the voiding contractions. (Pelvipharm, internal data)

Summarized methodology:

The bladder is perfused with continuous acetic acid (0.1% for guinea pigs, 0.5% for rats) at a rate of 50 µl/min while intravesical and blood pressure are monitored concomitantly.

Related Pelvipharm bibliography:

Non disclosable information for confidentiality reasons

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