

Ovariectomy-induced urinary dysfunction in mice

A MODEL OF MENOPAUSE

Model

Menopause is often followed by changes in a woman's urinary function. Symptoms include the need to urinate more frequently (increased urinary frequency) and the inability to control urination (urinary incontinence).

These urinary changes occur for two reasons: menopause reduces the amount of the female hormone oestrogen, and a lack of oestrogen reduces the urinary tract's ability to control urination.

We have developed, in mice, a model of menopause based on ovariectomy-induced urinary dysfunction.

Specie

Mice

Interest

- This model is suitable for compounds acting on the urinary tract and those used in hormonal therapy.
- Urinary symptoms observed in the model are close to those observed in humans.
- This model is validated with the relevant compound oestradiol used in the clinic.

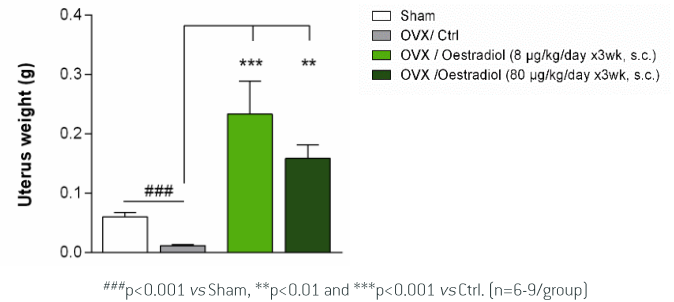
Model Description

- Under anaesthesia, mice (4 weeks old) are ovariectomized (OVX).
- 5 weeks after ovariectomy, urinary function is evaluated by:
 - Leak Point Pressure (LPP) test
 - Continuous or discontinuous cystometry
 - Micturition calendar using metabolic cages

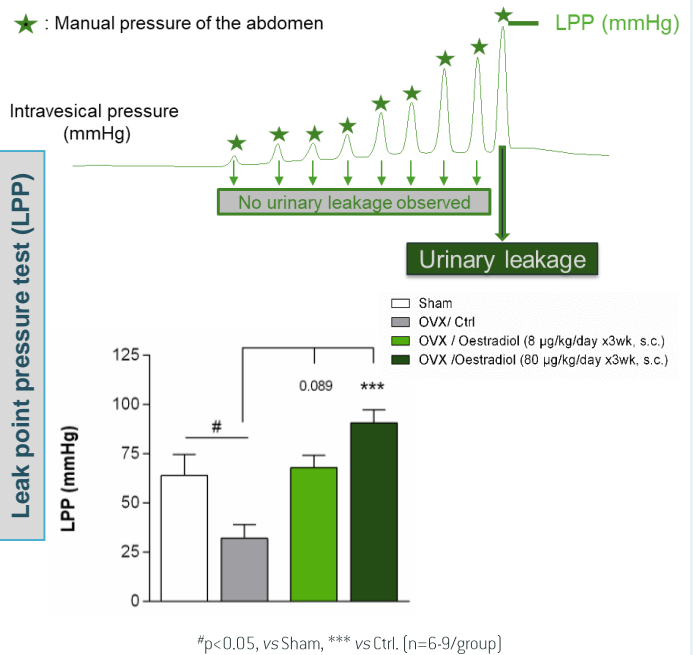
Parameters evaluated

- Uterine atrophy:
 - Uterus weight (g)
- Urinary incontinence:
 - LPP (mmHg)
- Bladder hyperactivity:
 - Intercontraction interval (ICI, sec)
 - Amplitude of micturition (AM, mmHg)
 - Voided volume (VV, mL)
 - Residual volume (RV, mL)
 - Micturition frequency (MF, nbr/h)

Oestradiol reverses menopause-induced uterine atrophy



Oestradiol alleviated menopause-induced urinary incontinence



Oestradiol alleviated menopause-induced bladder hyperactivity

