

In vitro organ baths functional experiments with animal tissues

Animal tissues :

- In vitro functional investigation of animal tissue function in normal and **pathophysiological** conditions.
- Unrestricted amount of tissue.
- Evaluation of the ability of drugs at modulating different smooth muscle tone can be performed on contractile or relaxant response elicited by pharmacological agents or by electrical field stimulation (EFS).
- Evaluation of mRNA by RT-PCR or protein expression, by immunohistochemistry (IHC) or western-blot (WB), in parallel of organ bath studies.

TISSUES	SPECIES	EXAMPLE OF RECORDING (<i>Pelvipharm, internal data</i>)
Bladder	Rat , Guinea-pig <i>(particularly relevant to evaluate purinergic neuro-transmission and spontaneous phasic contractions) , Mouse</i>	 <i>Recording of CRC of carbachol on bladder strips of rat</i>
Prostate	Rat, Guinea-pig	 <i>Recording of CRC to norepinephrine on prostatic strip of guinea-pig.</i>
Corpus cavernosum	Rat, Mouse, Rabbit	 <i>Recording of CRC to acetylcholine on cavernosal strip of WKY rat after a precontraction to phenylephrine 10⁻⁵ M</i>
Seminal vesicles	Rat	 <i>Recording of FRC to EFS on seminal vesicle strip of rat</i>
Vessels (Aorta, carotid, mesenteric artery, etc ...)	Rat, Mouse, Guinea-pig, Rabbit	 <i>Recording of CRC to Acetylcholine on aorta of rat after a precontraction to phenylephrine 10⁻⁶ M</i>

CRC = concentration-response curve

NB: Pelvipharm will gladly study the feasibility of performing additional in vitro assays on other species to meet its client's needs.

Endpoints:

- Evaluation of the capacity of a drug to inhibit detrusor smooth muscle contractile activity.
- Determination of potency (**EC₅₀**) and efficiency (**Emax**) of a drug.
- Determination of the affinity (**pA₂**) of a drug for a human bladder receptor.

Related Pelvipharm bibliography:

Oudot, A. et al. **Physiol Res** (2009) : 58(4):499-509
 Behr-Roussel D., et al. **Eur. Urol.** (2008) ; 53(6) : 1272-1281
 Oger S. et al. **J. Urol.** Abstract (AUA, 2007) : 177(4) (# 257)
 Oger S. et al. **Eur. Urol.** Abstract (EAU, 2007) : 6(2) : 272
 Behr-Roussel D., et al. **Eur. Urol.** (2005) : 47(1) : 87-91
 Behr-Roussel D., et al. **Am. J. Physiol.** (2005) : 288(1) : R276-283
 Behr-Roussel D., et al. **Am. J. Physiol.** (2003) : 284(3) : R682-688

Links to applicable therapeutic areas / targeted disorders:

- Sexual pharmacology

- * ED (Erectile Dysfunction)
- * Ejaculatory Disorders

- Lower urinary tract

- * BPH (Benign prostatic Hyperplasia)
- * NDO (Neurogenic Detrusor Overactivity)
- * SCI (Spinal Cord Injury)
- * OAB (Overactive Bladder)

- Cardiovascular and metabolism pharmacology

- * Hypertension
- * Metabolic syndrome
- * Atherosclerosis
- * Diabetes Mellitus