

## Efficacy

### Organs/tissues bath systems

An isolated organ bath assay is the classical pharmacological screening tool widely used to assess the mechanism of drug action through of the concentration-response curves (contraction or relaxation)<sup>1</sup>. This technique is applicable in follow areas: cardiovascular (aortic rings, heart tissues or other muscle strips), gastro-intestinal (jejunum, ileum, colon, gastric antral muscle and sphincter), respiratory (trachea, bronchus, phrenic diaphragm preparations, pulmonary arterial smooth muscle), urinary and reproduction (urinary bladder, ureter, prostate, uterus penile muscle strips) among others.

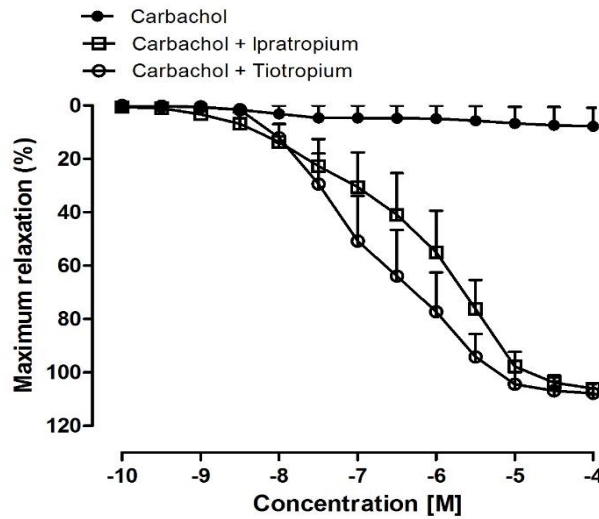
**Species, strain, sex:** rat and mouse (colonies from Charles River Laboratories), guinea-pig, rabbit, male or female

**Number of animals/group:** 3 to 5 animals

**Treatment mode:** *in vitro*

**Main read-outs:** concentration-response curves for agonists/antagonists, half maximal effective concentration ( $EC_{50}$ ), half maximal inhibitory concentration ( $IC_{50}$ ), competition of antagonists (Schild analysis).

### Validation Data



**Figure:** Cumulative concentration-response curves for relaxation produced by the muscarinic antagonists Ipratropium and Tiotropium (0.0001 to 100  $\mu$ M) on the Carbachol (3  $\mu$ M)-induced contractile response in the isolated guinea-pig trachea. The results are expressed as percentage of the control contraction to Carbachol (3  $\mu$ M). Each point represents the mean with vertical lines showing the SEM for 6-7 preparations obtained of 5 animals.

The project includes study plan and final report. Raw data are inspected by quality assurance unit. The experimental procedures was previously approved by the CIEnP Committee on the Ethical Use of Animals.

#### References:

<sup>1</sup>Jespersen B, Tykocki NR, Watts SW, Cobbett PJ. Measurement of smooth muscle function in the isolated tissue bath-applications to pharmacology research. *J Vis Exp.* 2015 95:52324, 2015.