

Safety/Efficacy

Arterial blood pressure and heart rate

Arterial and venous catheterization of rats has long been used in laboratory research¹. Catheterization can be used for monitoring of hemodynamic parameters including systolic, diastolic and mean arterial blood pressure (MAP) and heart rate (HR). Therefore, this model is important tool for evaluating the efficacy and safety of new molecules.

Species: *Rattus norvegicus* (Sprague Dawley or Wistar Hannover)

Main read-outs: mean arterial pressure; systolic and diastolic pressures, heart rate.

Number of animals/group: 6 animals

Route of administration: upon request

Treatment mode: upon request

Validation Data

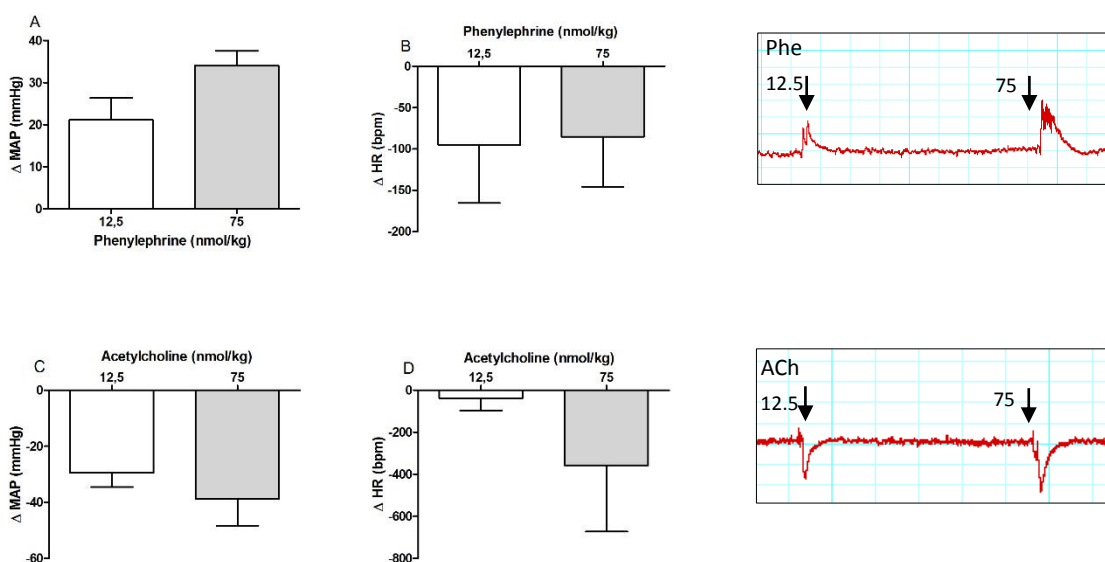


Figure: Effects of the Phenylephrine and Acetylcholine on hemodynamic parameters in conscious rats. The animals were treated with Phenylephrine (Phe) or Acetylcholine (ACh) (12.5 and 75 nmol/kg, endovenous route). The recorded parameters were mean arterial blood pressure (MAP; A and C) and heart rate (HR; B and D). The results are represented by variation between the values obtained before and after drug administration (Δ - delta) Each column represents the mean \pm SEM of 6 rats per group.

To avoid bias and to allow reproducibility all in vivo experiments follow the ARRIVE guidances². Rat colony from Charles River Laboratories are bred and maintained in SPF conditions. The project includes study plan and final report. Raw data are inspected by quality assurance unity. The experimental procedures was previously approved by the CIEnP Committee on the Ethical Use of Animals.

References:

- ¹Buckingham RE. Indwelling catheters for direct recording of arterial blood pressure and intravenous injection of drugs in the conscious rat. *J Pharm. Pharmacol.* 28(5):459-461, 1976.
- ²Kilkenny C, Browne WJ, Cuthill IC, Emerson M, Altman DG. Animal research: reporting in vivo experiments: The ARRIVE guidelines. *PLoS Biol.* 8 (6): e1000412, 2010.