

## IN VIVO PHARMACOKINETIC STUDIES

### In vivo pharmacokinetic profile determination of a compound in mice and/or rats

Pharmacokinetics is the study of the changes in bloodstream and tissues concentration of a drug with time after its administration. The pharmacokinetic profile of a compound is related to its absorption, distribution, metabolism and excretion (ADME) in the body<sup>1</sup>. Thus, the pharmacokinetic study is an important tool and a prerequisite for the processes of drug discovery and development<sup>2</sup>.

**Species (strain):** *Mus musculus* (CD1, Swiss, Balb c) and *Rattus norvegicus* (Sprague Dawley or Wistar Hannover)

**Sex:** Male and/or female

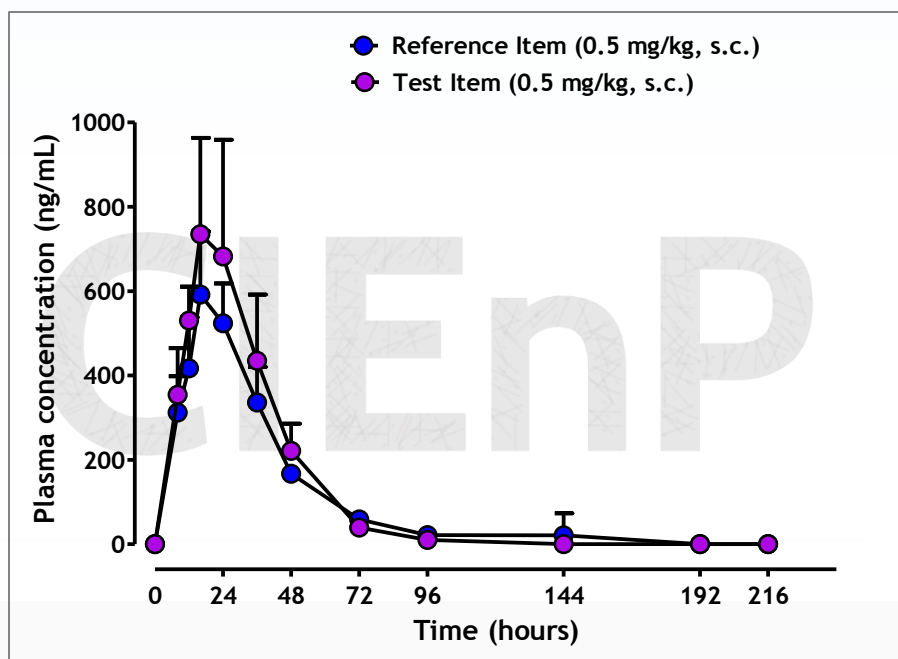
**Route of administration:** upon request

### Validation Data

**Analysis Method:** LC-MS/MS; LC-MS; GC/MS

**Main read-outs:** CL,  $V_{ss}$ ,  $t_{1/2}$ ,  $C_{max}$ ,  $T_{max}$ ,  $AUC_{(0-t)}$ ,  $AUC_{(0-inf)}$

**Facultative read-outs:** F and others.



**Figure:** Concentration-time profile for the Test Item and the Reference Item following subcutaneous administration (0.5 mg/kg) in rats. Each data point represents the mean  $\pm$  SEM of  $n = 4$  rats per group.

To avoid bias and to allow reproducibility all in vivo experiments follow the ARRIVE guidances<sup>3</sup>. Mouse and rat colonies from Charles River Laboratories are breed and maintained in SPF conditions. The project includes study plan and final report. Raw data are inspected by quality assurance unity. All experimental procedures are previously approved by the CIEnP Committee on the Ethical Use of Animals.

### References:

- <sup>1</sup>Kerns, E. H.; Di, L. Drug Like Proprieties: Concept, Structure Design and Methods from Toxicity Optimization Press: Elsevier, London, UK, 2016.
- <sup>2</sup>Andrade, Edinéia Lemos de et al. Estudos Pré-Clínicos. In: MASSUD FILHO, João. **Medicina Farmacêutica: Conceitos e Aplicações**. Porto Alegre: Artmed Editora Ltda, 2016. Cap. 3. p. 31-66.
- <sup>3</sup>Kilkenny C, Browne WJ, Cuthill IC, Emerson M, Altman DG. Animal research: reporting in vivo experiments: The ARRIVE guidelines. PLoS Biol. 8 (6): e1000412, 2010.