

## GASTROINTESTINAL SYSTEM

### Acetic acid-induced ulcer

This method produces a penetrating gastric ulcer by means of the instillation of an acetic acid solution in gastric serosa<sup>1</sup>. It is suitable bioassay to testing new substances with potential gastric healing activity.

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

**Number of animals/group:** 8 animals

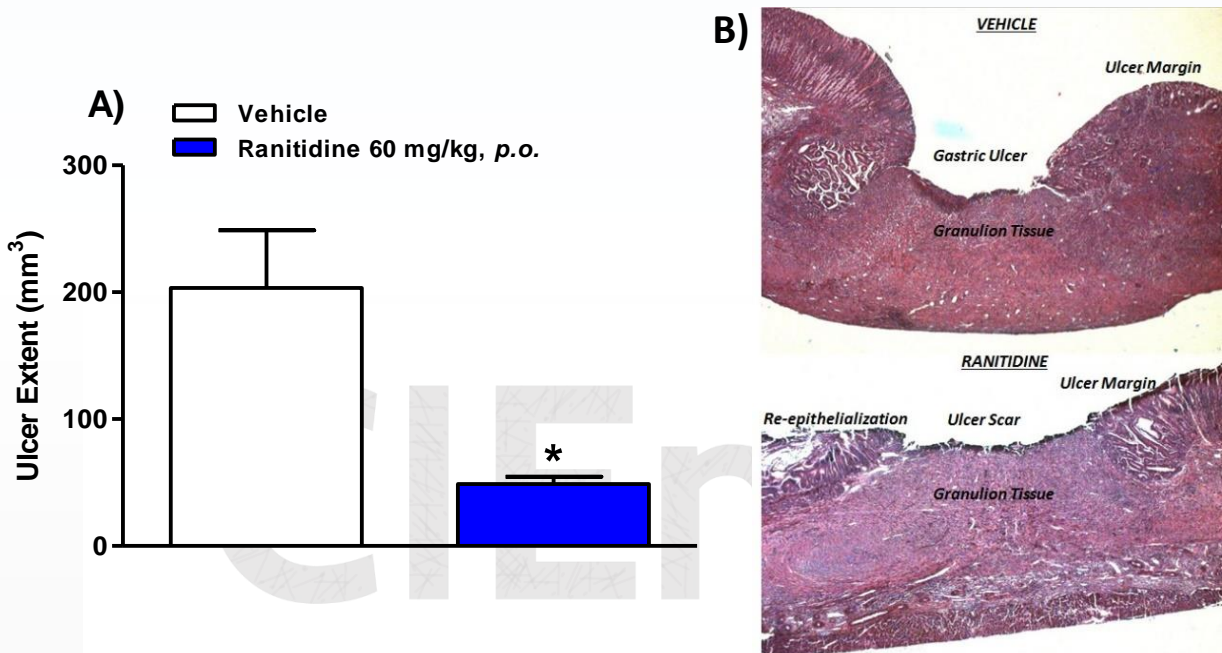
**Route of administration:** upon request:

**Treatment mode:** upon request

**Main Read-outs:** Ulcer extent (macroscopic or microscopic analysis), images of mucosa, gastric mucus content<sup>2</sup>.

**Facultative read-outs:** glutathione content, detection of neutrophil infiltration, cell proliferation, immunohistochemistry, cytokine release, RT-PCR analysis of biomarker messenger RNA and others.

### Validation Data



**Figure:** Ulcer extent (A) and histological sections of the gastric ulcers observed on the 17<sup>th</sup> day after the instillation of 80% acetic acid solution in the rat serosa (Vehicle) and after 14 days of treatment with ranitidine, used as reference item (60 mg/kg, p.o.) (Ranitidine) (B). Each column represents the mean  $\pm$  SEM of 8 mice per group. For statistical analyses was used *t* test. \**P* < 0.05 versus vehicle group.

To avoid bias and to allow reproducibility all *in vivo* experiments follow the ARRIVE guidances<sup>2</sup>. Rat colony from Charles River Laboratories is breed 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:

<sup>1</sup>Okabe S, Roth LA, Pfeier J. A method of experimental penetrating gastric and duodenal; ulcers in rats. *Am J Dig Dis*, 16: 277-280, 1971.

<sup>2</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.