

GASTROINTESTINAL SYSTEM

Nonsteroidal anti-inflammatory drug-induced ulcer

The purpose of this model is to verify the potential gastroprotective effects of new substances. In this model, the animals are pre-treated with the Test Substance and after, receive a high dose of nonsteroidal anti-inflammatory drug, to induce gastric lesions¹.

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: Lesion extent (macroscopic or microscopic analysis), images of mucosa, gastric mucus content².

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

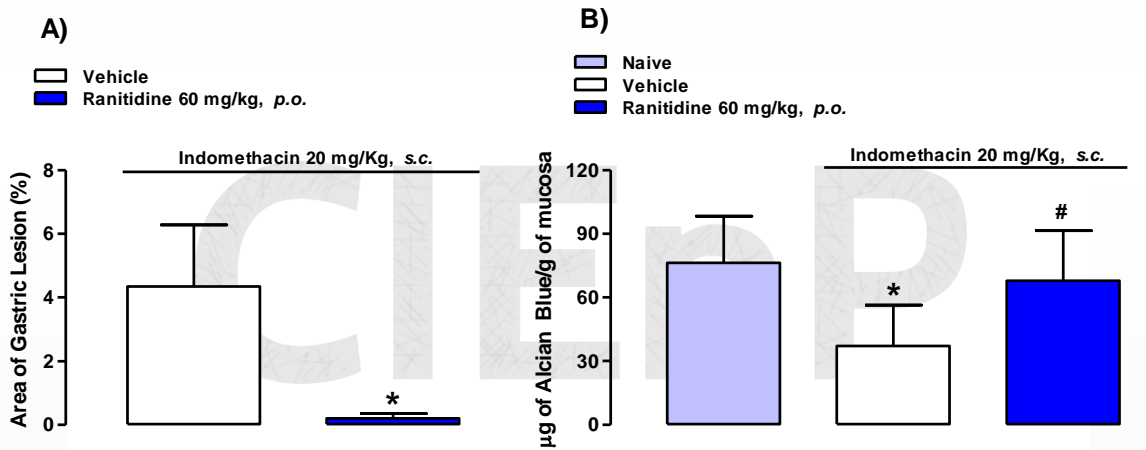


Figure: Area of Gastric Lesion (A) and Gastric Mucus Content (B) after induction of gastric lesions with Indomethacin (20 mg/kg, s.c.). Ranitidine was used as reference item (positive control group). Each column represents the mean \pm SEM of 10 mice per group. For statistical analyses was used *t* test (A: **P* < 0.05 versus vehicle group) and one-way ANOVA with Bonferroni post-hoc test (B: **P* < 0.05 versus naive group and #*P* < 0.05 versus vehicle group).

To avoid bias and to allow reproducibility all in vivo experiments follow the ARRIVE guidances³. 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:

- ¹Djahanguiri B. The production of acute gastric ulceration by indomethacin in the rat. *Scand J Gastroenterol.* 4: 265, 1969.
- ²Corne SJ, Morrisey S M; Woods RJ. A method for the quantitative estimation of gastric barrier mucus. *J. Physiol. Lond.* 224: 116-117P, 1974.
- ³Kilkenny C, Browne WJ, Cuthill IC, Emerson M, Altman DG. Animal research: reporting in vivo experiments: The ARRIVE guidelines. *PLoS Biol.* 8 (6): e1000412, 2010.