

GASTROINTESTINAL SYSTEM

Acid gastric secretion evaluation: Pylorus ligation

Ligation of the pylorus is a simple and reliable method for production of gastric ulceration in the rat, which is caused by accumulation of acidic gastric juice in the stomach. Briefly, rats are fasted for 12 h, followed by the anesthesia by isoflurane to make the surgical procedure of the ligation of the pylorus. The amount of gastric secretion is collected 4 h after ligation to further analyses.

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

Number of animals/group: 8-10 animals

Route of administration: upon request

Treatment mode: upon request

Main read-outs: Gastric secretion volume and total acidity.

Facultative read-outs: Histopathology, immunohistochemistry, RT-PCR analysis of biomarker messenger RNA, hematology and others.

Validation Data

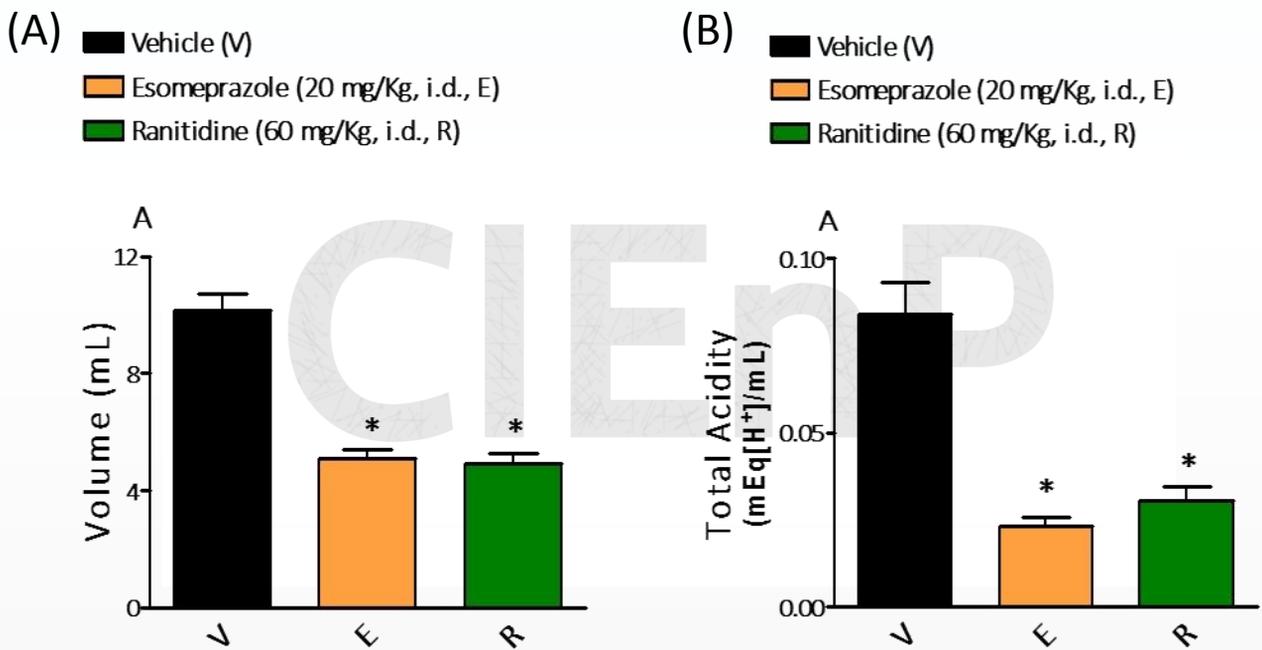


Figure: Effect of Esomeprazole and Ranitidine in gastric ulceration induced by ligation of the pylorus. (A) Total volume of gastric secretion and (B) Total acidity, 4 hours after surgery. Each column represents the mean \pm SEM of 8 rats per group. Statistical analyses used was one-way ANOVA with a post-hot Bonferroni. *P < 0.05, versus vehicle group.

To avoid bias and to allow reproducibility all in vivo experiments follow the ARRIVE guidances². 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:

- Shay H, Komarov AS, Fels SE, Meraze D, Gruenstein M, Siplet H. A simple method for the uniform production of gastric ulceration in rat. *Gastroenterology*. 5: 43 – 61, 1945.
- 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.