

PAIN AND INFLAMMATION

Postoperative-induced Pain Model

Postoperative pain comprehends one of the most common causes of acute pain in clinical practice, being observed in more than 200 million patients who undergoes surgical procedures worldwide annually¹. Treatment of postoperative pain is a challenge due to limiting adverse effects presented by clinical available drugs. In these sense, a rodent model of postoperative pain induced through plantar incision in mice² is largely used for research and development of more effective and safe drugs for postoperative pain treatment.

Species: *Mus musculus* (Swiss);

Gender: Male and Female

Number of animals/group: 5-6 animals per group;

Route of administration: upon request

Treatment mode: upon request;

Main Read-outs: Paw Withdrawal Threshold (g);

Validation Data

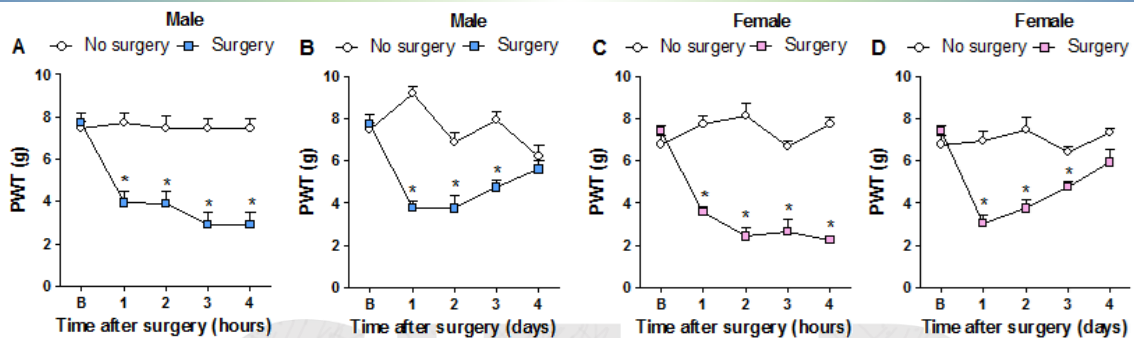


Figure 1. Time-course of mechanical hyperalgesia induced by plantar incision in male and female mice. Mechanical hyperalgesia from 1 to 4 hours and from 1 to 4 days after plantar incision in male (A and B) and female (C and D) mice. Data are presented as mean± S.E.M. Statistical analyses were performed by two-way ANOVA followed by Bonferroni post hoc test. * indicates significant statistical difference ($p < 0,05$) when compared surgery group with no surgery group. PWT: Paw Withdrawal Threshold; g: grams.

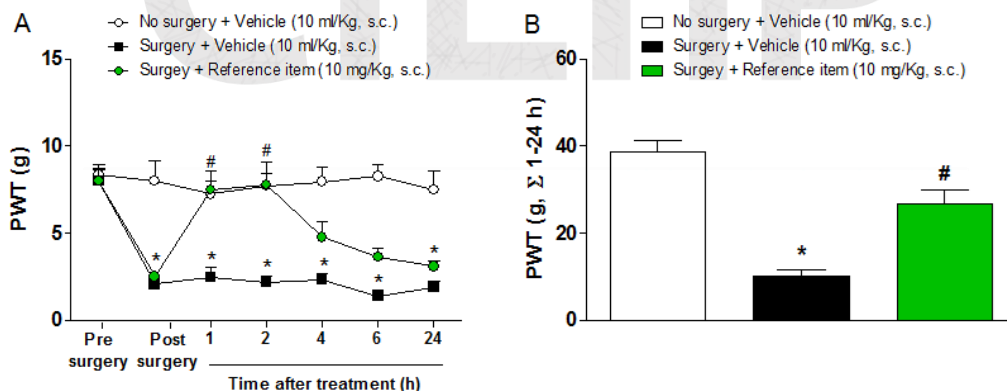


Figure 2. Reference item effect in mechanical hyperalgesia induced by plantar incision in male and female mice. (A) Time-course; (B) Sum of response obtained from 1 to 24 hours after treatment. Basal paw withdrawal thresholds were performed before surgery (pre surgery) and 2 hours after surgery (post surgery). Immediately after post surgery basal, animals were treated by subcutaneous route with vehicle (10 ml/Kg) or reference item (10 mg/Kg) and mechanical hyperalgesia was evaluated from 1 to 24 hours. Results are expressed as mean±S.E.M. Statistical analyses were performed by two-way ANOVA followed by Bonferroni post hoc test (A) and by one-way ANOVA followed by Dunett's post hoc test (B). * indicates significant statistical difference ($p < 0,05$) when compared with no surgery group. # indicates significant statistical difference ($p < 0,05$) when compared to surgery+vehicle group. PWT: Paw Withdrawal Threshold; h: hours; g: grams.

To avoid bias and to allow reproducibility all in vivo experiments follow the ARRIVE guidances³. Mice colony from Charles River Laboratories is breed and maintained in SPF conditions. The project includes study plan and final report. The experimental procedures was previously approved by the CIEnP Committee on the Ethical Use of Animals.

References:

¹ Clarke H, Soneji N, Ko DT, Yun L, Wijesundera DN: Rates and risk factors for prolonged opioid use after major surgery: population based cohort study. *BMJ* 2014; 348:g1251.
² Pogatzki, EM and Raja, SN. A mouse model of incisional pain. *Anesthesiology*, 99 (4): 1023-1027, 2003.
³ Kilkeny C, Browne WJ, Cuthill IC, Emerson M, Altman DG. Animal research: reporting in vivo experiments: The ARRIVE guidelines. *PLoS Biol.* 8 (6): e1000412, 2010.

Contact us: +55 (48) 3261-2856 / contato@cienp.org.br