PAIN AND INFLAMMATION

Partial sciatic nerve ligation-induced neuropathy

The experimental procedure involves the ligation of the ipsilateral sciatic nerve at the highthigh level, by tying the distal one third to one-half of the dorsal portion of the sciatic nerve. Animals exhibit signs of allodynia to von Frey stimulation and hyperalgesia to both thermal and mechanical stimuli. High reproducibility and ease of surgical procedure are two important advantages of this model[1,2].

Species: *Mus musculus* (C57/BL6)
Number of animals/group: 8-10 animals
Route of administration: upon request
Treatment mode: upon request
Main Read-outs: Hindpaw withdrawal response (mechanical and thermal stimulus), locomotor activity (open field and rotarod).
Facultative read-outs: Evaluation of the spinal cord, detection of neutrophil infiltration, cytokine release, enzymes/proteins activities and expression, microglial, astrocytes and neurons morphology and proliferation.

Validation Data

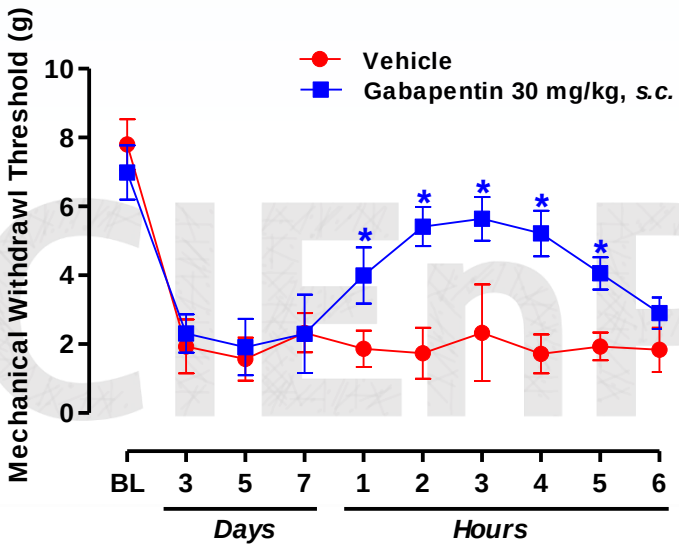

Figure: Mechanical hyperalgesia induced by partial sciatic nerve injury in mice, assessed by electronic von Frey. Gabapentin (30 mg/kg, s.c.) was used as reference item (positive control group). Each point represents the mean ± SEM of 8 mice per group. For statistical analyses was used two-way ANOVA with Bonferroni post-hoc test. *P < 0.05 versus vehicle group.

To avoid bias and to allow reproducibility all in vivo experiments follow the ARRIVE guidances[3]. Mice 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:

[1] Malmberg AB, Basbaum AI: Partial sciatic nerve injury in the mouse as a model of neuropathic pain: Behavioural and neuroanatomical correlates. Pain, 76: 215-222, 1998

[2]Seltzer Z, Dubner R, Shir Y. A novel behavioural model of neuropathic pain disorders produced in rats by partial nerve injury. Pain, 43: 205-218, 1990.

[3]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.