

**Natureza do trabalho:** Resumo

**TÍTULO**

*INDUCTION OF DEPRESSION AND THE COLD HYPERALGESIA COMPLETE FREUND'S ADJUNCTIVE (CFA) IN MICE*

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**RESUMO**

**Introduction:** The inflammatory process is the first reaction of the body against infection and noxious stimulus. The experimental inflammation model using the complete Freund's adjuvant (CFA) (*Mycobacterium tuberculosis*) produces pain, inflammation and depression. The CFA induces systemic response in the host, immune cells activation and increase in cytokines level. Cytokines cross the blood-brain barrier leading to neuroinflammation characterized by activation of glial cells, to production of mediators that can modulate the pain sensitivity and second Pathos theory, induces depression. Chronic pain also causes increased expression of cold (hyperalgesia) TRPM8 receptors; sensitization of nociceptor by interleukin-1  $\beta$  (IL-1 $\beta$ ), which stimulates the synthesis of prostaglandin E2 (PGE2) inducing hyperalgesia to mechanical stimulus and cold. **Objectives:** Standardize depression model and hyperalgesia induced by CFA, to evaluate the depression and hypernociceptive induced by CFA in mice. **Methods:** the C57bl/6 mice (20 to 25g) were randomly divided into groups treated with dexamethasone (positive control group) at a dose of 1 mg/kg subcutaneously, and vehicle (control group). One hour after oral administration or subcutaneous injection, the animals received 20  $\mu$ l CFA in the footpad. The forced swim test was conducted to assess depression and to assess the sensitivity to cold testing of acetone. **Results/discussion:** in the forced swimming test group of mice treated with dexamethasone (1 mg/kg) remained in the state of immobility approximately 50 seconds, since the group that received only vehicle stood still for a longer period of time in the state of immobility, about 97 segundos, indicating probable depression. The cold hyperalgesia was proven by the test of acetone. The animals that received vehicle responded with strong withdrawal of paws after 14 seconds, and the animal that received dexamethasone (1 mg/kg) responded to challenge with a paw withdrawal lightly and low intensity after a period of 8 seconds. **Conclusion:** From the results obtained, it was shown that CFA is able to induce chronic pain, hyperalgesia to cold and depression being the standardized test in the Faculty of Health Sciences laboratories.