



EFFECTS OF *Tithonia diversifolia* EXTRACT ON MODELS OF CHRONIC PAIN OF INFLAMMATORY AND CENTRAL ORIGIN IN MICE

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INTRODUCTION

Tithonia diversifolia, popularly known as "Mexican sunflower", "Calêndula", "Arnica", among others, belongs to the botanical family Asteraceae and its native to Mexico and Central America, being found in several tropical countries, including Brazil. Several studies have demonstrated its medicinal properties such as antimalarial, antidiabetic, antioxidant, anti-inflammatory, among others. These effects are mostly correlated to the presence of flavonoids in its composition, which are known by its large list of medicinal effects. Since chronic pain is currently one of the most incapacitate condition with a wide range of causes and commonly with no satisfactory and resolute treatment, this study objective is to evaluate the *T. diversifolia* ethanolic extract (EETD) effects on different chronic pain models in mice.

MATERIAL AND METHODS

To evaluate the effects of EETB on both chronic pain types that will be discussed further, C57BL/6 mice species was used. The inflammatory chronic pain protocol was performed using CFA (1 mg/mL) as an inflammatory agent, which was inject on plantar superficies of right hand paw. After the injection, the animals recieved the EETD (100 mg/kg) or Gabapentine (positive control), both orally administrated, for 14 consecutive days. The fibromyalgia was induced in the animals using Reserpine (0,25 mg/kg), which was administrated subctaneous once a day for three consecutive days. On the fourth day

the mice recieved the extract orally, once a day, for 16 consecutive days. In the two different protocols, the mice were submitted to behavioral tests and to the Von Frey filament evaluation for mechanic stimulation response.

RESULTS

The *T. diversifolia* extract showed satisfactory effects on the inflammatory pain model, decreasing the mechanical hypersensitivity response of the animals that were treated with EETD at a concentration of 100 mg/kg, also presenting the potential to modulate the secretion of the main pro-inflammatory cytokines such as TNF, IL-1 β and IL-6. Also in the animals submitted to fibromyalgia model, the EETD were able to decrease significantly the pain threshold and frequency of response. This result will be further completed with dosage of the main neurotransmitters that have an essential role on the mechanisms of this model of central chronic pain.

CONCLUSIONS

The results obtained so far shows that the *T. diversifolia* extract has a strong potential on decreasing pain and its mechanisms. Further analysis will be performed to base and complete the study.

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