Neuropathic pain-attenuating potential of aqueous extract of *Lippia citriodora* in chronic constriction injury model in rats

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**Abstract:**
Numerous studies have revealed that spinal inflammation plays an important role in neuropathic pain. The present study was designed to investigate the intraperitoneal effects of aqueous extract of *Lippia citriodora* in the chronic constriction injury (CCI)-induced neuropathic pain in rats and the possible involvement of astroglia and microglia activation. Neuropathic pain was induced by placing four loose ligatures around the sciatic nerve. Acetone drop, von Frey hair and radiant heat tests were performed to assess cold allodynia, mechanical allodynia, and heat hyperalgesia, respectively. CCI was associated with the development of cold allodynia, mechanical allodynia, and heat hyperalgesia along with a rise in the levels of Iba1 (ionized calcium binding adaptor molecule-1) but not GFAP (glial fibrillary acidic protein), markers of microglia and astroglia respectively, were measured by western blotting, on days 3, 7 and 14 after the injury. Aqueous extract (100 and 200 mg/kg) for 14 days presented dose-dependent anti-nociceptive effects in animals subjected to CCI. The expression of Iba-1 protein was decreased on the treatment of *lippiacitriodora* extract (100 and 200 mg/kg). Taken together it may be concluded that spinal microglia are more activated than astrocytes in the peripheral injury-induced neuropathic pain and *L. citriodora*-mediated anti-inflammatory actions may be responsible for its beneficial effects in neuropathic pain in rats.

**Keyword:** *Lippia citriodora*; Chronic constriction injury; Neuropathic pain; Glia