In vivo anti-nociceptive and anti-inflammatory activities of the aqueous extract of the leaves of Piper sarmentosum.

Abstract

Ethnopharmacological relevance: Piper sarmentosum (Piperaceae) is a medicinal plant traditionally used by the Malays to treat headaches, toothaches, coughs, asthma and fever. Aim of the study: In order to establish the pharmacological properties of the leaf of this plant, studies were performed on anti-nociceptive and anti-inflammatory activities. Materials and methods: The aqueous extract of Piper sarmentosum (AEPS) was prepared in the doses of 30, 100 and 300 mg/kg. Anti-nociceptive activity of AEPS was evaluated by abdominal constriction and hot-plate tests. AEPS was also pre-challenged with 5 mg/kg naloxone to determine the involvement of opioid receptors. Anti-inflammatory activity was evaluated using carrageenan-induced paw edema assay. Results: Subcutaneous administration of AEPS exhibited anti-nociceptive activity ($P<0.05$) in a dose-dependent manner in the abdominal constriction and hot-plate tests. Pre-treatment with naloxone completely ($P<0.05$) diminished the extract anti-nociceptive activity in both tests. The AEPS, at all doses used, exerted significant ($P<0.05$) anti-inflammatory activity in a dose-dependent manner. Conclusions: The AEPS exhibits opioid-mediated anti-nociceptive activity at the peripheral and central levels, as well as anti-inflammatory activity, which confirmed the traditional uses of the plant in the treatment of pain- and inflammatory-related ailments.

Keyword: Anti-inflammatory; Anti-nociceptive; Aqueous extract; Opioids; Piper sarmentosum; Piperaceae.