

## Suppression of nociception by *Ocimum masaiense* root extract involves both central and peripheral mechanisms

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### Abstract

The members of genus *Ocimum* find wide application in traditional medicine. The current study was undertaken to evaluate the probable mechanisms of antinociceptive action of chloroform/ethanol extracts of *Ocimum masaiense* roots. The extract was prepared by soxhlet extraction. The mechanism of action experiments involved administration of various blockers along with the extract in the formalin test. Data was analyzed using Kruksal Wallis test. The extract possessed significant antinociceptive activity in the formalin test. Atropine, enhanced while Ketamine, Capsaicin and Naloxone significantly inhibited the antinociceptive activity in the early phase. Only capsaicin had a significant inhibitory effect on the antinociceptive activity of the extract in the late phase among the substances tested. Based on the findings it is postulated that the extract mediates its antinociceptive activity via a complex interplay of various neurotransmitter systems which may be mediated both centrally and peripherally.

**Key words:** *Ocimum masaiense*; Pain; Mechanism of action; Antinociception; Medicinal plants

### Introduction

Genus *Ocimum* belonging to the Lamiaceae family consists of 64 members that occur naturally in tropical and subtropical America, Africa and Asia (Paton et al., 1994). Members of this genus find wide applications in traditional medicine systems (Paton et al., 1994; Mwangi et al., 2012). *Ocimum sanctum* L, Mant. (Holy Tulsi) which is widely used in Ayurvedic medicine is a salutary example (Gupta et al., 2006; Mondal et al., 2009). The pharmacological and chemical properties of species this genus have been intensively studied; indeed a Pubmed search for this plant species yields over 233 publications. In contrast, there has been a relative paucity of studies on *Ocimum* species endemic to Africa, despite the fact