

Analgesic and anti-inflammatory activities of 9-Hexacosene and Stigmasterol isolated from *Mondia whytei*

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Received: 5 January 2012, **Revised:** 17 January 2012 **Accepted:** 18 January 2012

Abstract

The aim of the study was to ascertain the analgesic properties of *Mondia whytei* roots and to isolate and characterize the active constituents. Bioactivity guided fractionation of the chloroform root extract yielded stigmasterol and 9-hexacosene. Stigmasterol (15 mg/kg) and 9-hexacosene (30 mg/kg) significantly ($p < 0.05$) inhibited chemical nociception induced by intraperitoneal acetic acid. Stigmasterol (7.5, 15, 30 and 100 mg/kg) dose dependently reduced the time spent in pain behavior in both the early and late phases of the formalin test. 9-hexacosene dose dependently caused significant ($p < 0.001$) antinociceptive effect on the late phase of the formalin test. Co-administration of naloxone failed to antagonize the analgesic activity of stigmasterol and 9-hexacosene in the formalin test. We concluded that both stigmasterol and 9-hexacosene possess potential analgesic effects which are most likely mediated by their anti-inflammatory activities rather than through opioid receptor system.

Keywords: *Mondia whytei*; Analgesic; Anti-inflammatory

Introduction

Mondia whytei (hook f), belongs to the Asclepiadaceae family. It is a forest floor plant with aromatic rhizomatous roots. It is a climber which grows up to 6 m high, leaves broadly ovate with a base cordate, apex acuminate and corona of 11 – 12 mm long (Kokwaro, 2006). *Mondia whytei* is distributed widely in Africa. In Kenya, it is common in wet and humid areas, particularly common in Western Kenya. (Beentje, 1994). *Mondia whytei* root have traditionally been used to treat various diseases and conditions that include pain, swelling,