

Antifungal activity of Nilobamate isolated from *Acacia nilotica* Willd

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Abstract

The seed-pod of *Acacia nilotica* Willd was selected on the basis of its popular use in the Hausa folk medicine to treat some fungal diseases such as foot and mouth cow diseases in northern Nigeria. Plant material was extracted with 95 % ethanol that provided ethanol extract. Ethanol extract was subjected to column chromatography followed by thin layer chromatography, which afforded a compound (AN-5). The test compound AN-5 showed significant and slightly better antifungal activity against *Aspergillus fumigatus* as compared to the standard drug ketoconazole. Spectroscopic analysis revealed AN-5 to be a carbamate derivative (octyl 2-hydroxy phenylcarbamate). Further studies are recommended for development of octyl 2-hydroxyphenylcarbamate (Nilobamate) as a new lead compound for better treatment of fungal infections.

Keywords: Seed-pod; ketoconazole; *Acacia nilotica*; *Aspergillus fumigatus*

Introduction

Acacia nilotica Willd (Mimosaceae) is widely used tree from Africa and the Indian subcontinent (Fagge and Greaves, 1990). Decoctions prepared from the stem-bark and fruits of the plant are used to combat dysentery, leprosy, pneumonia and meningitis in Guinea Bissau and Sudan (Watt and Breyer-Brandwijk, 1962; Kokwano, 1977), while in Nigeria the seed-pod, gum and roots are used against skin diseases and malaria fever (Etkin, 1997). Water extracts of the stem-bark and fruits have demonstrated anti-bacterial and anti-malarial activities on *Pseudomonas aeruginosa* and the larvae of *Culex* mosquito respectively (El-hamidi, 1970; Taura *et al.*, 2004). Acetone and aqueous extracts of the stem-bark of *A. nilotica* have shown some inhibition on the enzyme prolygalacturanase and the yeast *Pyricularia oryzae* (Prasad and Gupta, 1967; Gupta and Bilgrami, 1970). Dichloromethane and methanol extracts of the leaves of plant have shown activity on *Trypanosoma brucei* and *Typanosoma rhodensiense* (Watt *et al.*, 1962). Seed-pod extracts of the plant have demonstrated antibacterial activity on some β -lactamase producing bacteria (Mbatchou and Adoum, 2011). Column chromatogr-