

[PS 4] **Bioactivity of 'Flemingin A' and other Natural Products from the Leaves of *Flemingia grahamiana***

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Introduction

Flemingia grahamiana (Wight & Arn.) is an erect herb or sub-shrub up to 1.8 m tall with deep (sometimes tuberous) roots and 3-foliolate alternate leaves. It is distributed in Tropical Africa and occurs in open and wooded savanna, sometimes near water in riverine vegetation, on hillside, termite mounds and along roadsides (Gillett, *et al.*, 1971; Jansen, 2005). The powder from the fruits and inflorescence of the plant is one of the principal sources of a dye and cosmetic called 'Waras (or Wurrus, or black kamala)' sold in India and Arabia (Cardillo, *et al.*, 1968; Jansen, 2005). The root decoction of the plant is used against diarrhoea and dysentery in Zimbabwe and Malawi. The plant is also used externally against skin diseases and internally as a purgative and against colds in India (Jansen, 2005).

In our search for cancer chemopreventive agents from plants, we wish to report the antioxidant properties of a known chalcone, Fleminging A (**1**) and the characterization of a new chalcone with a 3,4-disubstituted-1-methylcyclohexene moiety (**2**) from the leaves of *F. grahamiana*. Also reported, for the first time from the genus *Flemingia*, is the known anthraquinone, emodin (**3**).

Materials and Methods

The leaves of *Flemingia grahamiana* were collected from Kitale District, Western Province, Kenya, in October 2008. The plant was identified at the University Herbarium, Botany Department, University of Nairobi.

The air-dried leaves (413.2 g) of *F. grahamiana* were pulverized and extracted with CH₂Cl₂-MeOH (1:1) at room temperature to yield 29.6 g of crude extract. The extract was subjected to CC on silica gel, using gradient elution of EtOAc in n-hexane as the solvent. Further fractionation and purification was done by repeated chromatography on silica gel, PTLC, and sephadex LH-20. The structures of isolated compounds were elucidated based on a combination of spectroscopic techniques and by comparing with the data in the literature. Antioxidant property test was done as described by Ohnishi, *et al.* (1994).