

Triterpenes, Sesquiterpene and Alkaloids from *Meiogyne monosperma*

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Abstract: This paper reports for the first time phytochemical study on *Meiogyne monosperma* (Annonaceae) which was collected from National Park, Pahang, Malaysia. The isolation and purification steps involve column chromatography, centrifugal thin layer chromatography and preparative thin layer chromatography lead to isolation of four triterpenes, lupeol, campesterol, β -sitosterol; a sesquiterpene, β -selinenol and two alkaloids, lirioidenine and lanuginosine.

Keywords: Annonaceae, *Meiogyne monosperma*, centrifugal thin layer chromatography, triterpene, sesquiterpene, alkaloid.

INTRODUCTION

Meiogyne is a genus of flowering plants consists of 24 species belonging to the family Annonaceae [1]. Only three *Meiogyne* species have been recorded in Malaysia which are *M.cylindrocarpa*, *M.virgata* and *M.monosperma*. Our previous investigation on alkaloidal fractions of *M.virgata* has resulted in the isolation of lirioidenine, anonaine together with other aporphine, oxoaporphine and protoberberine alkaloids [2]. Lirioidenine is well known for its anticancer activity [3] and this compound also shown vasodilator effects on rat aorta [4]. Anonaine has been shown to have anticancer activities [5] and antimicrobial activity [6]. *M.cylindrocarpa* was found to contain dimeric sesquiterpenes and lactones [7, 8]. The current paper reports on isolation of *M.monosperma* for the first time.

MATERIAL AND METHODS

Plant Material

M.monosperma was collected in National Park, Pahang Malaysia with permission from the park administration. The

plant was identified by Shamsul Khamis. Plants vouchers of *M.monosperma* can be deposited at University Technology MARA, Malaysia.

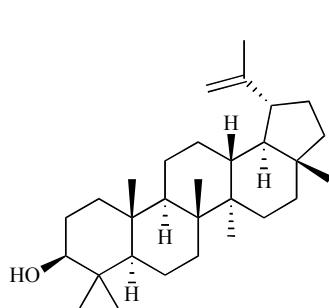
Extraction

M.monosperma stems were extracted with dichloromethane for eight hours by using soxhlet extractor. After removal of the solvent, the crude extract was subjected to column chromatography fractionation with gradient elution systems by using hexane: dichloromethane and dichloromethane: methanol solvent combinations. The fractions were monitored using thin layer chromatography and combined accordingly. Further purification steps involved centrifugal thin layer chromatography and preparative thin layer chromatography lead to isolation of four triterpenes, lupeol, campesterol, stigmasterol and β -sitosterol; a sesquiterpene, β -selinenol and two alkaloids, lirioidenine and lanuginosine.

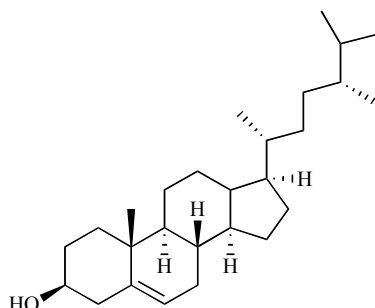
RESULTS

The structure of the isolated compounds were established based on analysis of spectroscopic data including 1D and 2D NMR, FTIR, UV, MS and comparison with published data [1, 2, 9-12].

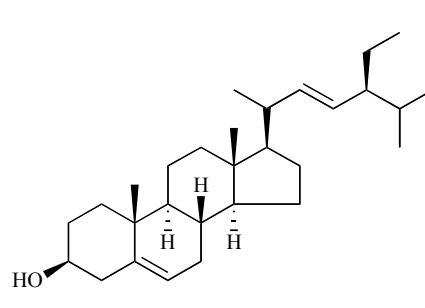
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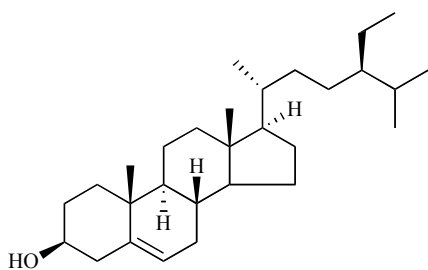
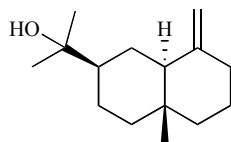
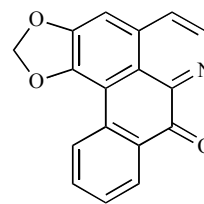
Lupeol



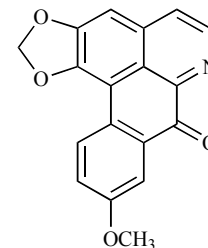
Campesterol



Stigmasterol

 β -sitosterol β -selinenol

Liriodenine



Lanuginosine

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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