UNIVERSITI TEKNOLOGI MARA

CHEMICAL CONSTITUENTS FROM THE HEXANE FRACTION OF *GONIOTHALAMUS MACROPHYLLUS* ROOTS

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non – academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Goniothalamus is one of the species from the Annonaceae family consisting of 115 species distributed throughout the tropics and subtropics. *Goniothalamus macrophyllus* is a medicinal plant used widely in Peninsular Malaysia and known by the local name "pokok gajah beranak". Phytochemical studies on *Goniothalamus* species have led to the isolation and characterization of large number of styryl lactones, acetogenins, alkaloids and flavanoids. Besides, investigation on the biological activities of *Goniothalamus* species showed the potential usage as an anticancer, antimalarial, antiplasmodial and antimicrobial. The objectives of the study are to isolate compounds from the hexane fraction from the roots of *G. macrophyllus* and test against brine shrimp assay. Dried roots of *G. macrophyllus* were ground into fine powder using a cutter mill. The ground roots were soaked in 80 % aqueous methanol at room temperature, filtered and the solvent were removed under reduced pressure to give crude methanolic extract. The crude extract was further suspended in aqueous methanol and sequentially partitioned with *n*-hexane, chloroform and *n*-butanol. Two known compounds, goniothalamin **(13)** and linderatone **(147)** with two new compounds, goniolandrene A **(148)** and B **(149)** were isolated and purified from the hexane fraction by using analytical HPLC, preparative HPLC and TLC preparative. The structures were discussed and confirmed by using one (1D) and two - dimensional (2D) NMR, MS-TOF, IR, UV-Vis spectroscopy and comparison with the known compounds. The isolated compounds were tested against Brine Shrimp Lethality assay (BSL).

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