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Phytochemical Constituents of *Aquilaria malaccensis* Leaf Extract and Their Anti-Inflammatory Activity against LPS/IFN- γ -Stimulated RAW 264.7 Cell Line

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Abstract

This study aims to identify the major phytochemical constituents in *Aquilaria malaccensis* (Thymelaeaceae) ethanolic leaf extract (ALEX-M) and elucidate their ability to suppress nitric oxide (NO) production from a murine macrophage-like cell line (RAW 264.7) stimulated by lipopolysaccharide (LPS) and interferon-gamma (IFN-gamma). Dichloromethane (DCM) and ethyl acetate (EtOAc) fractions of ALEX-M were subjected to column chromatography. Eight known compounds were isolated for the first time from this species. Compounds were identified using spectroscopic techniques (IR, UV, HRESIMS, and 1D and 2D NMR). Anti-inflammatory activity of both extract and isolated compounds were investigated in vitro. The fractions offered the isolation of epifriedelanol (1), 5-hydroxy-7,4'-dimethoxyflavone (2), luteolin-7,3',4'-trimethyl ether (3), luteolin-7,4'-dimethyl ether (4), acacetin (5), aquilarinenside E (6), iriflophenone-2-O- α -L-rhamnopyranoside (7), and iriflophenone-3-C- β -glucoside (8). The findings suggest the pharmacological potential of the crude extract (ALEX-M) and its isolates as natural anti-inflammatory agents, capable of suppressing NO production in RAW 264.7 cells stimulated by LPS/IFN-gamma.

Keywords

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