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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

ACS Omega • Article • *Open Access* • 2022 • DOI: 10.1021/acsomega.2c00439

Eissa, Manar A.[a,b] ✉ ; Hashim, Yumi Z.H.-Y.[a] ; Abdul Azziz, Saripah S.S.[c] ; Salleh, Hamzah Mohd[a] ; Isa, Muhammad Lokman Md[d] ; +4 authors

[a] International Institute for Halal Research and Training (INHART), International Islamic University Malaysia, Selangor, Gombak, 53100, Malaysia

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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-γ (IFN-γ). 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-Lrhamnopyranoside (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-γ. © 2022 The Authors. Published by American Chemical Society.

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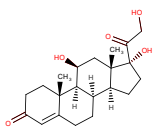
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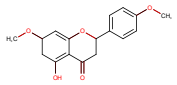
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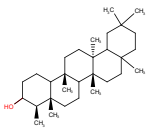
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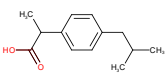
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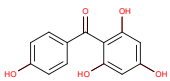
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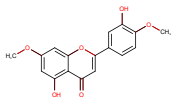
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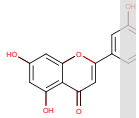
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Funding details

Details about financial support for research, including funding sources and grant numbers as provided in academic publications.

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Funding text
This research study was financially supported by the Fundamental Research Grant Scheme (FRGS/1/2019/WAB11/UIAM/02/4) provided by the Ministry of Higher Education, Malaysia.

Corresponding authors

Corresponding author	M.A. Eissa
Affiliation	International Institute for Halal Research and Training (INHART), International Islamic University Malaysia, Selangor, Gombak, 53100, Malaysia
Email address	manareissa1210@gmail.com

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Abstract

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