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Secondary metabolites from the fruits of Garcinia schomburgkiana

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Garcinia schomburgkiana Pierre (Clusiaceae), known in Thai as "Madan", is an edible evergreen tree that grows in Laos, Vietnam, Cambodia, and Thailand. It has ethnomedical uses as a laxative and expectorant, and in the treatment of coughs, menstrual disturbances, and diabetes. Previous studies of the bioactive constituents of G. schomburgkiana have reported the presence of flavonoids, xanthones, triterpenoids, depsidones, phloroglucinols, and biphenyl derivatives, some of which exhibited antimalarial, cytotoxic, and anti α-glucosidase properties. As an extension of a search for new constituents from G. schomburgkiana, a new compound, named schomburgkianone I (1), was isolated from the fruits of G. schomburgkiana, along with twelve known compounds, morelloflavone (2), morelloflavone-7-O-β-glucopyranoside (3), morelloflavone-7-O-β-acetylglucopyranoside (4), GB-1a (5), 3,8''-binaringenin-7''-O-β-glucoside (6), GB-2a (7), fukugetin (8), volkensiflavone (9), volkensiflavone-7-O-β-glucopyranoside (10), guttiferone K (11), oblongifolin C (12), 5,5'-[oxybis(methylene)]di(2-furaldehyde)(13), and 4-hydroxybenzoic acid (14). Their structures were elucidated by spectroscopic methods, including NMR and MS spectra.

Recent Publications

1. Nguyen HT, Nguyen TT, Duong TH, Tran NMA, Nguyen CH, Nguyen THA, Sichaem J (2022) α-Glucosidase inhibitory and antimicrobial benzoylphloroglucinols from Garcinia schomburgkiana fruits: *In vitro* and in silico studies. *Molecules*, 27(8), 2574.
2. Do TML, Huynh T T, Sichaem J (2022). New benzil and isoflavone derivatives with cytotoxic and NO production inhibitory activities from Placolobium vietnamense. *Molecules*, 27(14), 4624.
3. Do TH, Duong TH, Nguyen HT, Nguyen TH, Sichaem J, Nguyen CH, Nguyen HH, Long NP (2022) Biological activities of lichen-derived monoaromatic compounds. *Molecules*, 27(9), 2871.
4. Do TML, Duong TH, Nguyen VK, Phuwapraisirisan P, Niamnont N, Jarupinthusophon S, Sichaem J. (2021) Schomburgkixanthone, a novel bixanthone from the twigs of Garcinia schomburgkiana. *Natural Product Research*, 35(21), 3613-3618.
5. Do TML, Duong TH, Nguyen VK, Phuwapraisirisan P, Doungwichitrkul T, Niamnont N, Sedlak S, Inthanon K, Sichaem J (2021) Identification of highly potent α-glucosidase inhibitors from Garcinia schomburgkiana and molecular docking studies. *Songklanakarin Journal of Science & Technology,* 43(6), 1597-1603.

Biography

Jirapast Sichaem has completed his PhD from Department of Chemistry, Faculty of Science, Chulalongkorn University, Thailand. He is a lecturer at the Faculty of Science and Technology, Thammasat University Lampang Campus, Lampang, Thailand. He has expertise in the field of cytotoxic, antioxidant, and antidiabetic constituents from Thai medicinal plants. He has published more than 90 papers in scientific journals.

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