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Isolation of a novel compound from *Dillenia suffruticosa* (Griff) mart

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A commonly found plant species in Brunei Darussalam, *Dillenia suffruticosa* (Griff) Mart (locally known as Simpur bini) is a large evergreen shrub. Its leaves are large (up to 37x25 cm), spirally arranged and with big scentless flowers (up to 10-13 cm wide) having bright yellow colored petals and white stamens. This species is used traditionally to promote wound healing, relieve fever and rheumatism and as an astringent. In this study, we focused on the leaves of this plant. The crude methanol extract was obtained by exhaustively extracting the powdered leaves in methanol. The crude methanol extract were then subjected to successive solvent-solvent partitioning using hexane, chloroform, ethyl acetate and diethyl ether. All these five extracts were analyzed using 1H NMR spectroscopy and multiple methyl peaks were found in the chloroform extract, showing the presence of triterpenes. Multi-step isolation and purification processes, such as gel permeation and adsorption column chromatography and Preparative Layer Chromatography (PLC), were carried out on the chloroform extract. With every step, 1H NMR spectra were obtained from each fraction or band to confirm the presence of triterpenes. Two compounds were isolated from the chloroform extract and analyzed using spectroscopy methods such as 1D (1H and 13C) and 2D (DEPT, HSQC, HMBC, COSY and NOESY) NMR spectroscopy and Mass Spectrometry (MS) to elucidate their structures. We report the presence of a novel compound DSL-Cpd-1 and the second compound, DSL-Cpd-2, is known as betulinic acid. DPPH radical scavenging activity and antibacterial screening of the novel compound revealed no activity however further analysis such as cytotoxicity could be carried out to determine the properties of this novel compound. Meanwhile, betulinic acid has been found to be biologically active from previous studies having anti-parasitic, cytotoxic and antibacterial properties. Hence, DSL-Cpd-2 isolated in this study could also show similar biological activities.

Biography

Farazimah Haji Yakop has completed her MSc in Chemistry by research under the Faculty of Science, University of Brunei Darussalam (UBD), with her work mainly focused on the phytochemical and biological studies on selected medicinal plants found in Brunei Darussalam. She had also obtained her Bachelor's Degree in the same field from UBD as well. Prior to undertaking her MSc research studies, Farazimah was a research assistant for the project 'Ex situ Conservation, Biological and Phytochemical Studies of Flora of Brunei Darussalam', where she worked on the studies of medicinal plants in Brunei.

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