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Isolation and Characterization of Flavonoids from Maytenus quadrangulata

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Plant-derived natural products remain fundamental pillars in the discovery and development of new therapeutic agents, particularly in the current context of combating emerging viral diseases, which pose significant challenges to global public health. The genus *Maytenus* (Celastraceae) is recognized for its pharmacological relevance, with species exhibiting anti-inflammatory, antioxidant, and antiviral activities. *Maytenus quadrangulata*, in particular, has demonstrated potential against emerging arboviruses such as Zika and Mayaro. Previous studies isolated two bioactive flavonoids from the ethyl acetate leaf extract: 4'-*O*-methylepigallocatechin (**1**) and (-)-4'-*O*-methylepicatechin 5-*O*-*β*-D-glucopyranoside (**2**), the latter being reported for the first time in the literature, but only in insufficient quantities for adequate antiviral evaluation.[1] This work aimed to overcome this limitation by re-investigating the ethyl acetate extract and its constituents. Collected leaves were air-dried, ground, and subjected to exhaustive extraction with hexane, chloroform, ethyl acetate, and methanol. During concentration of the ethyl acetate extract, a precipitate (1.1 g) was formed, and the filtrate yielded the remaining crude extract (19.6 g). The precipitate was subjected to column chromatography on silica gel using a chloroform-methanol gradient. Fractions with similar profiles on thin-layer chromatography (TLC) were pooled and further purified using preparative chromatographic techniques. After purification, TLC analysis allowed the identification of compounds **1** and **2**, whose structures were confirmed by ^{1}H and ^{13}C NMR in comparison with literature data. From the precipitate of the ethyl acetate extract, 3.3 mg of compound **1** and 9.2 mg of compound **2** were isolated. Despite these low yields, analysis of the remaining crude extract (19.6 g) indicated a substantial presence of both flavonoids, enabling their isolation in larger quantities. Future perspectives include: (i) fractionation of the crude extract to obtain additional quantities; (ii) evaluation of antiviral activity against Zika and Mayaro. These findings reinforce the potential of *M. quadrangulata* as a source of antiviral agents and highlight the importance of integrated approaches in natural products to address public health challenges.

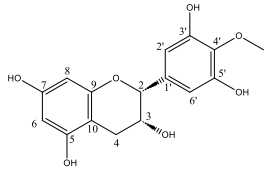

Figura 1: 4'-*O*-metilepigalocatequina

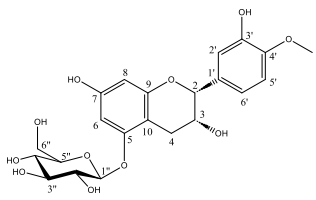

Figura 2: (-)-4'-*O*-metilepicatequina 5-*O*-*β*-D-glicopiranosídeo

Keywords: *Maytenus quadrangulata, flavonoids, natural products, Celastraceae.*
References: *1. Aguilar, M.G. et al. Chemistry & Biodiversity. 2024, 21, e202400636.*
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