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Evaluation of the biological activity of mangiferolic acid isolated from geopropolis from Bahia - Brazil

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Geopropolis is a natural substance produced by stingless bees, traditionally employed in the therapeutic management of various human pathologies. (Coutinho et al., 2023). This study aimed to isolate and evaluate the biological activity of metabolites present in extracts of geopropolis produced by *Melipona scutellaris*. For this purpose, geopropolis collected in the city of Cruz das Almas, Bahia (Brazil), was subjected to maceration in methanol (3 × 24 h), yielding a crude extract, which was then partitioned with organic solvents (hexane, chloroform, and ethyl acetate). The chloroform phase was subjected to column chromatography using silica gel as the stationary phase and organic solvents of increasing polarity as the mobile phase. Through these procedures, a compound was isolated and identified as mangiferolic acid (Figure 1) by analysis of ^{1}H and ^{13}C Nuclear Magnetic Resonance (1D and 2D) spectra, in addition to comparison with data previously reported in the literature (Jong et al., 2013). Mangiferolic acid exhibited significant antioxidant activity against the superoxide radical, with a dose-dependent response (IC_{50} = 92.1 µM/mL), and showed no cytotoxicity in murine macrophages (RAW 264.7). The results demonstrated the biological potential of geopropolis from *Melipona scutellaris*, as evidenced by the isolation of mangiferolic acid with noteworthy antioxidant activity and low cytotoxicity. These findings highlight the importance of investigating Brazilian natural products as a source of promising bioactive molecules. Acknowledgments.The authors thank CAPES, the State University of Feira de Santana (UEFS), and the Graduate Program in Plant Genetic Resources for financial support.

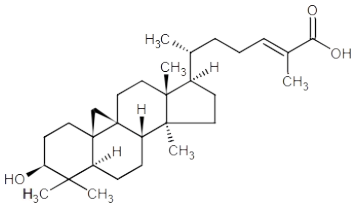

Figure 1: Chemical structure of mangiferolic acid

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