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Section:

TOTAL PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY OF THE EXTRACT AND FRACTIONS FROM THE PERICARP OF TECOMA STANS

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The increasing use of synthetic antioxidants in the food and cosmetic industries, associated with undesirable effects, has driven the search for natural and sustainable alternatives. Antioxidants play a crucial role in the efficacy of plants as medicines and in combating chronic diseases. These antioxidants are incorporated into our diet through compounds found in plants, in a practical and direct way. *Tecoma stans* (Bignoniaceae), a species introduced in Brazil for ornamental purposes, is widely recognized in traditional medicine for its antidiabetic, anti-inflammatory and antioxidant properties. However, the pharmacological potential of its pericarp remains poorly investigated. Therefore, this study aimed to evaluate the total phenolic content and antioxidant activity of the methanol extract (ME) and its fractions obtained from the pericarp of *T. stans*. Phenolic compounds were quantified using the Folin-Ciocalteu reagent, with results expressed in gallic acid equivalents (GAE), while antioxidant activity was evaluated through the ferric reducing antioxidant power (FRAP) assay. The dichloromethane (DCM) fraction showed the highest phenolic content 113.81 µg GAE/mg, followed by the ethyl acetate (EA) and hydromethanol (HM) fractions and ME, with 100.26, 78.72 and 74.19 µg GAE/mg, respectively. The total phenolic compound content quantified in the samples was directly proportional to the antioxidant capacity by the FRAP method, confirming a positive correlation between total phenolics and the reduction of ferric ions. The EC_{50} values were 4.83, 17.72, 9.93 and 31.43 µg/mL, respectively, for DCM, EA, HM and ME. The results highlight the pericarp of Tecoma stans as a promising natural source of antioxidant compounds, with potential applications in pharmaceutical and phytotherapeutic formulations, in addition to highlighting the importance of investigating underutilized plant species in the search for bioactive molecules, contributing to the development of natural, safe and sustainable therapeutic strategies.

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