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CHEMICAL STUDY AND ANTIOXIDANT ACTIVITY EVALUATION OF EXTRACTS AND FRACTIONS FROM *Miconia nervosa*

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The Brazilian Cerrado is one of the most biodiverse biomes in the world, and its flora has attracted significant scientific interest due to its wide range of chemical and biological properties, particularly in traditional medicine. *Miconia nervosa* was selected for study based on previous reports of biological activities within the same genus, including antimalarial, anti-inflammatory, analgesic, and antidiabetic effects. In this context, the present study aimed to investigate the antioxidant potential of leaf extracts and fractions from *Miconia nervosa* and annotate its specialized metabolites. Hexane (HE) and ethanol (EE) extracts were obtained sequentially by maceration, followed by liquid-liquid extraction of EE to yield dichloromethane (PD), ethyl acetate (PA), and aqueous (PAq) fractions. Antioxidant activity was assessed using DPPH radical scavenging and ferric reducing antioxidant power (FRAP) assays, and total phenolic content (TPC) was determined using the Folin-Ciocalteu method. The PA, PD, and PAq fractions exhibited the highest DPPH inhibition with values greater than 91%, comparable to the reference standard quercetin (94% antioxidant capacity). In the FRAP assay, PA showed the strongest activity, with 109 µmol Trolox equivalents per gram of extract. The highest TPC values were also found in PA (509 mg GAE/g) and PAq (829.3 mg GAE/g). The most active fraction (PA) was further analyzed by negative-mode ESI-HPLC-MS/MS, leading to the annotation of metabolites including gallic acid derivatives, flavonoids, and hydrolyzable tannins.

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