10th Brazilian Conference on Natural Products
XXXVI RESEM
4-7 November 2025, Belo Horizonte, MG, Brazil

Section: 05

CHEMICAL CHARACTERIZATION, ANTIOXIDANT ACTIVITY AND *IN VITRO* CYTOTOXICITY OF BACABA PULP EXTRACT (*Oenocarpus bacaba* Mart.)

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Oenocarpus bacaba Mart. (Arecaceae) is native to Brazil and abundant in the Amazon region. The fruit is rich in several bioactive compounds with antioxidant and antimicrobial properties[1]. This work aimed to characterize the chemical composition of fruit pulp hydroethanolic extract of *O. bacaba* (BHE), evaluate its antioxidant capacity, estimate the total phenolics (TF) and the cytotoxicity. The fruit pulp was freeze-dried, and 10 g of dried pulp was exhaustively extracted with hexane, followed by a hydroethanolic solution (70% ethanol). Chemical composition analysis was performed by liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS), and the spectra were compared to the GNPS and MoNA libraries. In vitro antioxidant assays were evaluated using the DPPH and β-carotene/linoleic acid methods[2]. The cytotoxicity (MTT assay) was evaluated against breast cancer (Sk-MEL-19), gastric ascites (AGP01), lung cancer (A549), and normal human lung fibroblasts (MRC5). BHE showed relative predominance of the flavonoids isoquercitrin and isorhamnetin-3-glucoside-4'-glucoside, followed by quinic acid, ferulic acid and caffeic acid. BHE inhibited 56.8 ± 2.9% of DPPH radicals, approximately twice as active as the trolox (633.7 ± 32.2 mg.TE/g). In the lipid peroxidation assay, BHE inhibited β-carotene oxidation by 36.3 ± 0.8%, indicating good antioxidant capacity. The BHE presented a moderate classification for FT (2.54 ± 0.21 mg.GAE/g). In the study by Neves et al. (2015)[3], the aqueous extract presented a low classification (0.081 to 0.11 mg GAE/g), possibly associated with the extraction method (water at 50°C). Another study identified a high phenolic content of 42.07 mg GAE/g in the bacaba peel. The BHE showed moderate cytotoxicity in the tumor lines Sk-MEL-19 (IC_{50} = 91.04 µg/mL, SI = 0.41), AGP-01 (IC_{50} = 33.45 µg/mL, SI = 1.13), and A549 (IC_{50} = 43.67 µg/mL, SI = 0.86), as well as in the healthy cell line MRC-5 (CI_{50} = 37.80 µg/mL), but without selectivity, Selective Index (SI) less than 2.0. Therefore, BHE have promising applications in the pharmaceutical and food industries.

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Keywords: Flavonoids; isoquercitrin; LC-MS/MS.