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OC14: By-products of tropical fruits as sources of bioactive molecules: *Sicana odorifera* (vell.) Naudin epicarp case study

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Tropical fruits are widely appreciated for their sweet taste and generally known for their rich composition in bioactive compounds. However, the processing of this type of fruits can generate a large amount of non-edible and non-tradable by-products, consisting mainly in peels and seeds. These by-products have already been described as having a greater amount of bioactive compounds than the edible parts; this fact has been increasing the interest of the scientific community as also of several industrial fields for the application of these by-products. [1] In this context, the rigid non-edible epicarp of *Sicana odorifera* (vell.) Naudin, a purple-black tropical fruit from Brazil, [2] was evaluated for the anthocyanin and non-anthocyanin phenolic composition by High-Performance Liquid Chromatography coupled to a diode-array detector and a mass spectrometer functioning by electrospray ionization (HPLC-DAD/ESI-MS). The bioactive potential was assessed thought several *in vitro* assays: the antioxidant activity was determined by thiobarbituric acid reactive substances assay (TBARS) and by the oxidative hemolysis inhibition assay (OxHLIA) and the antimicrobial activity was tested in four bacteria and four fungi strains using the microdilution method.

S. *odorifera* epicarp hydroethanolic extract presented four phenolic compounds, namely two *O*-glycosylated quercetin and kaempherol derivatives and two *O*-glycosylated anthocyanins, being the latest group the most abundant one with a total amount of 24±1 mg of anthocyanins/g of dry epicarp. Concerning its bioactive potential, *S. odorifera* hydroethanolic extract revealed considerable antioxidant activity (EC_{50} values of 48.2±0.5 and 27±1 μg/mL for TBARS and OxHLIA assays, respectively) and antimicrobial action against all bacteria and fungi strains evaluated (minimal inhibitory concentrations (MICs) ≤ 2.2 mg/mL).

The results obtained allow to classify this tropical fruit epicarp as a potential source of bioactive compounds with great market value, since they can be applied in several industrial sectors, including the food and pharmaceutical industries.

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