

BIOACTIVE FRACTIONS FROM SYAGRUS CORONATA FIXED OIL SELECTIVELY INHIBIT THE GROWTH OF COLORECTAL CANCER CELLS

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Syagrus coronata is a palm tree native to the Caatinga biome, belonging to the Arecaceae family, with significant socioeconomic and ecological relevance in the Brazilian semiarid region. Fixed oils extracted from plant seeds, such as those of *S. coronata*, stand out as promising sources of bioactive compounds, rich in fatty acids often associated with pharmacological activities, including anti-inflammatory and anticancer effects. Therefore, the objective of this study was to characterize and potentially isolate bioactive compounds from the fixed oil of *S. coronata* with anticancer activity against HCT-116 cells (colorectal cancer). The oil was supplied by the Cooperativa da Região do Piemonte da Diamantina (COOPES), in Capim Grosso, Bahia, Brazil. The sample was subjected to hydroalcoholic partitioning (methanol/water 8:2) to extract polar compounds. Approximately 5.5 g of the hydroalcoholic fraction was fractionated by silica gel column chromatography (normal phase) using a gradient of increasing polarity of organic solvents. The obtained fractions were grouped according to similar chemical profiles (monitored by TLC) and analyzed by liquid chromatography using an Acquity HClass UPLC system (Waters), equipped with a C18 BEH column (1.7 µm). After separation, the analytes were subjected to tandem mass spectrometry (uhr-ESI-QqTOF Impact II, Bruker), in positive and negative ionization modes. In total, 12 chemically diverse fractions were obtained. Cytotoxicity assays were performed on HaCaT (non-tumorigenic) and HCT-116 (colorectal cancer) cell lines, using nuclear staining and High-Content Screening (HCS). Cells were stained with Hoechst 33342 and analyzed using the Operetta® system. Three fractions showed selective antiproliferative activity ($IC_{50} < 10 \mu\text{g/mL}$; selectivity index > 4). UPLC-MS/MS analyses revealed complex chromatographic profiles in the active fractions, which are currently undergoing dereplication and structural characterization. To date, the study has yielded promising results, indicating that Licuri oil may contain bioactive compounds that could contribute to improving its production chain and enhancing the value of its extraction process.

Keywords: Caatinga, *Syagrus coronata*, cancer, chemical profile, cytotoxicity