

SFE-CO₂ PROCESS TO OBTAINING HIGH BIOACTIVE EXTRACTS FROM OPUNTIA FRUITS. A COMPLETE STUDY OF THEIR BIOACTIVE PROFILE AND NUTRACEUTICAL POTENTIAL

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In the present work, supercritical fluid extraction (SFE) with CO₂ as solvent and EtOH/water (v/v) as co-solvent was optimised by applying 23 factorial experimental design for the extraction of betalains (betacyanins and betaxanthins) and phenolic compounds from *Opuntia ficus-indica* fruits var. *Colorada* and *Blanca Buenavista*, and *Opuntia stricta* var. *Dillenii* fruits. SFE-CO₂ conditions were a pressure of 250 bar, CO₂ flow of 40 g CO₂/min and temperature of 50°C, being a dynamic time of extraction of 60 min. The HPLC-DAD and HPLC-MS betalains and phenolic compounds profiles of the SFE-CO₂ obtained extracts were studied. Cell viability and anti-inflammatory activity were tested using the murine macrophage cell line (RAW 264.7), measuring the cell viability by the CellTiter96@Aqueous One Solution Cell Proliferation Assay. For anti-inflammatory activity, the Nitrite (NO₂⁻) is one of two primary and stable breakdown products of nitric oxide, in which results were expressed as the percentage of inhibition of nitric oxide production (% NOX). And to evaluate cellular antioxidant activity (CAA) Human colorectal adenocarcinoma cells (Caco-2) were used.