SFE-CO2 PROCESS TO OBTANING 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.