

Accelerated solvent extraction as an alternative tool for extraction of chlorogenic acid from *Cynara scolymus* leaves

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Finding new techniques to enhance the extraction efficiency of bioactive compounds from medicinal and aromatic plants (MAPs) is important due to their potential health benefits. The objective of this study was to evaluate extractability of chlorogenic acid from *Cynara scolymus* leaves using solvents under high pressure and temperature. Accelerated Solvent Extraction (ASE) is considered as a greener method for MAPs extraction when compared to conventional extraction technique. ASE is an extraction technique which combines both elevated pressure and temperature. Methodology & Theoretical Orientation: Chlorogenic acid from *Cynara scolymus* leaves was extracted using ASE applying one and three static cycles of extraction at 40, 80, and 120 °C. Static periods of extraction were carried out for 5, 10 and 15 min using 80% methanol/water (v/v) as the extraction solvent. The extracted solutions were characterized for chlorogenic acid content by HPLC. Findings: The highest chlorogenic acid yields were obtained after 10 min (67.4 and 66.8 mg/5g DM) using one and three static cycles of extraction; respectively. Accelerated Solvent Extraction (ASE) has proven to be an effective extraction technique. However its recommended not to exceed the extraction time over 10 min at elevated temperatures, due to the possible degradation of chlorogenic acid for prolonged extraction at extreme conditions.

Biography

Ibrahim Saleh, Researcher, Phytochemistry Department, National Research Centre, Egypt, has awarded his Ph.D degree from faculty of pharmacy, Cairo University, Egypt. He has awarded international scholarship as an academic visitor, Coventry University, Coventry, United Kingdom. During the last ten years, he has been publishing in the area of natural products chemistry, his program has come to focus on innovation and development of medicinal and aromatic plant processing.

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