

Analysis of chemical composition of pomegranate (*Punica granatum*) extracts by HPLC-DAD-ELSD and GC-MS



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Abstract

The pomegranate is known for its traditional use and medicinal since ancient times. It has health benefits for its various organs. Many studies have been done on its fruits, leaves and bark. Among the good properties, we mention the antioxidant¹ and antimicrobial² activities well known for fruit peel.

This study was devoted to the chemical characterization of pomegranate fruit bark extracts. Firstly, the dry material was ground and extracted successively with 4 solvents of increasing polarity (cyclohexane, dichloromethane, ethyl acetate, methanol). The extraction yield is low for the first three solvents (0.2-0.7%) and high for methanol (43%).

These different extracts were subsequently analyzed by HPLC-DAD-ELSD to characterize the phenolic and majority compounds in these extracts. A hundred phenolic standards were compared to the peaks of the different extracts.

In parallel, a characterization of the volatile chemical compounds was carried out by GC-MS by direct introduction and after derivation of the extracts by silylation.

more than 83 papers published in international peer-reviewed journals and 2 patents.

Speaker Publications:

1. "Physicochemical properties of bacterial cellulose obtained from different Kombucha fermentation conditions"; Journal of Vinyl and Additive Technology
2. "Roasted date palm seeds (*Phoenix dactylifera*) as an alternative coffee: chemical composition and bioactive properties"; Biomass Conversion and Biorefinery
3. "Metabolome-microbiome signatures in the fermented beverage, Kombucha"; International Journal of Food Microbiology/Volume333
4. "Spectroscopic and chromatographic investigation of soil organic matter composition for different agrosystems from arid saline soils from Southeastern Tunisia"; Arabian Journal of Geosciences/Volume 13/Issue 3
5. "Evaluation of in vitro biological activities: antioxidant; anti-inflammatory; anti-cholinesterase; anti-xanthine oxidase, anti-superoxyde dismutase, anti- α -glucosidase and cytotoxic of 19 bioflavonoids"; Cellular and molecular biology/ Volume 66/Issue 1

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Biography:

Jalloul Bouajila, was born on August 29th 1975 in France, is a Doctor in analytical chemistry since 2002. He occupied a post-Docs during 3 years before becoming Teacher researcher (2005) to the faculty of pharmacy of Toulouse, University of Paul Sabatier, France. He develops themes related to analytical chemistry (bio-guided fractionation, structural identification) for the valorization of natural substances in the pharmaceutical, cosmetic, food and agricultural. He is a supervisor and co-supervisor of several PhD and master students, Reporter for several national and international PhD committees, Author of