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ABSTRACT BOOK



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P-185 CHROMATOGRAPHIC TECHNIQUES TO OBTAIN THE BIOMOLECULES PROFILE OF WILD *Suillus granulatus*

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In recent years the interest in naturally occurring compounds has been increasing worldwide. Indeed, many of the bioactive compounds currently used as medicines have been synthesized based on the structure of natural compounds [1]. In order to obtain bioactive fractions and subsequently isolated compounds derived from natural matrices, several procedures have been carried out. One of these is to separate and assess the concentration of the active compound(s) present in the samples, a step in which the chromatographic techniques stand out [2].

In the present work the mushroom *Suillus granulatus* (L.) Roussel was chemically characterized by chromatographic techniques coupled to different detectors, in order to evaluate the presence of nutritional and/or bioactive molecules. Some hydrophilic compounds, namely free sugars, were identified by high performance liquid chromatography coupled to a refraction index detector (HPLC-RI), and organic and phenolic acids were assessed by HPLC coupled to a photodiode array detector (HPLC-PDA). Regarding lipophilic compounds, fatty acids were

determined by gas chromatography with a flame ionization detector (GC-FID) and tocopherols by HPLC-fluorescence detection.

Mannitol and trehalose were the main free sugars detected. Different organic acids were also identified (*i.e.* oxalic, quinic and fumaric acids), as well as phenolic acids (*i.e.* gallic and *p*-hydroxybenzoic acids) and the related compound cinnamic acid. Mono- and polyunsaturated fatty acids were the prevailing fatty acids and α -, β - and δ -tocopherol were the isoforms of vitamin E detected in the samples.

Since this species proved to be a source of biologically active compounds, the antioxidant and antimicrobial properties were evaluated. The antioxidant activity was measured through the reducing power, free radical's scavenging activity and lipid peroxidation inhibition of its methanolic extract, and the antimicrobial activity was also tested in Gram positive and Gram negative bacteria and in different fungi. *S. granulatus* presented antioxidant properties in all the performed assays, and proved to inhibit the growth of different bacterial and fungal strains.

This study is a first step for classifying *S. granulatus* as a functional food, highlighting the potential of mushrooms as a source of nutraceutical and biologically active compounds.

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