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ABSTRACT BOOK

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P-174 CHROMATOGRAPHIC ANALYSIS OF ANTIOXIDANT AND RELATED COMPOUNDS IN *POLYPORUS SQUAMOSUS* FROM DIFFERENT ORIGINS

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The antioxidant potential of mushrooms is mainly attributed to their composition in polysaccharides, phenolic compounds, tocopherols and some organic acids [1]. Phenolic compounds contribute directly to the antioxidative action and play an important role in stabilizing lipid peroxidation [2]; exhibit a wide range of bioactive properties such as anti-allergenic, anti-inflammatory and antimicrobial, which have been in part related to their antioxidant activity [3]. Tocopherols are important fat-soluble antioxidants, acting in the cellular membrane; due to their role as scavenger of free radicals protecting human cells against degenerative malfunctions [4]. Some organic acids are very common in natural matrices; malic acid contributes to a pleasantly sour taste and is often used as a food additive; citric acid is known due to its antibacterial and antioxidant properties and fumaric acid is important because of its antioxidant, anti-inflammatory, antimicrobial and acidifying properties [5]. The purpose of the present study was to analyze antioxidant and related compounds (phenolic compounds, tocopherols and organic acids) of *Polyporus squamosus* (Huds.) Fr. samples originated from two different origins (Portugal and Serbia). Specimens of *P. squamosus* were collected in Bragança (Northeast Portugal) and Jabučki rit (Northern Serbia) during April 2015 and 2012, respectively. Phenolic compounds, organic acids and tocopherols were determined by high performance liquid chromatograph (HPLC) coupled to a diode array detector (DAD), in the two first cases, and a fluorescence detector in the last one.

With respect to phenolic and related compounds, *p*-hydroxybenzoic and cinnamic acids were identified in both samples; the first one predominates in the sample from Portugal, while cinnamic acid was more abundant in the sample from Serbia. Tocopherols (α-, β and γ-isoforms) were found in the sample from Serbia, but in the sample from Portugal, γ-tocopherol was not identified. This sample showed the highest total tocopherols content, and revealed the highest level of β-tocopherol; γ-tocopherol predominated in the sample from Serbia. Among organic acids, it was possible to quantify oxalic, malic and fumaric acids in both samples. Malic acid was found in higher amounts in the sample from Serbia.

Overall, the present study shows that mushroom samples from different origins have dissimilar results, but are both rich in bioactive compounds, being a valuable source for the development of natural medicines and nutraceuticals.

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