

COMPOSITION OF REISHI AND REISHI/PROPOLIS EXTRACTS - LCMS ANALYSIS

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Reishi (*Ganoderma lucidum*) is one of the most important mushrooms used in China, Japan and Korea over the last 4000 years as a drug, additional remedy, or elixir. Commercial Reishi products are available as powders, dietary supplements and tea. On the other hand, bees product propolis has been used as remedy by humans since ancient times, thanks to its biological and pharmacological properties such as antimicrobial, antiviral, antioxidative, antihepatotoxic, antitumoral, antiinflammatory and, etc. The successful medical and pharmaceutical applications of propolis and Reishi led to an increased interest in chemical composition in their extracts.

For this study, commercial ethanolic extract of pure Reishi, and mixed Reishi/Propolis extracts were given by Firm Super Natura Leskovac. All extracts used for analysis were prepared from pure Reishi mycelium („Fungi Land“, Leskovac, Serbia).

Composition of Reishi and Reishi/Propolis ethanolic extracts was analyzed by liquid chromatography i.e. UHPLC–DAD-ESI-MS/MS method (ultrahigh performance liquid chromatography coupled with diode array and mass spectrometry detectors) in gradient elution regime of methanol and 0.1vol.% formic acid. Qualitative analysis of the extracts was performed by using UV-Vis spectra of the DAD signals and the MS-spectra with the corresponding [M-H]⁻, [M+H]⁺ ions and characteristic ion fragmentation within selected peaks (MS/MS), from the UHPLC chromatograms by comparison to literature data as well the standard compounds.

The analysis confirmed presence of bioactive compounds - triterpenes as basic physiologically active constituents in Reishi and polyphenols with dominant contribution of flavonoids in the Reishi/Propolis extracts. Precisely, ganoderic acid G, C6, AM1, D, F and J, ganoderenic acid B and D, ganodermic acid D and E, hydroxyganoderic acid D, acetoxyganoderic acid D, lucidenic acid D, ganolucidic acid D, elfvingic acid A and related triterpenoid compounds were detected in the Reishi extract, while, caffeic and *p*-coumaric acids and their isoprenoid derivatives, quercetin, isoramnetin, apigenin, luteolin, pinobanksin and derivatives were detected in the Reishi/Propolis extract.

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