

BOOK OF ABSTRACTS
THE 2ND BALKANS - CHINA
MINI-SYMPOSIUM ON NATURAL
PRODUCTS AND DRUG DISCOVERY



МИНИСТАРСТВО ПРОСВЕТЕ,
НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА



11-13 April, 2019
Belgrade, Serbia

**Institute for Biological Research "Siniša Stanković",
University of Belgrade, Belgrade, Serbia**

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Phytochemical investigations of *Salvia transsylvanica*, *Salvia glutinosa*, and *Salvia officinalis* from Romania and their bioactivities

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In the Romanian traditional medicine sage species are used as remedies for coughs, rheumatism, inflammatory and bacterial diseases, as well as antidiabetic remedies.

In this study, an HPLC method was applied for determination of 22 phenolic compounds in extracts of *S. glutinosa*, *S. transsylvanica*, and *S. officinalis*. The enzyme inhibitory potential of the extracts was evaluated using microtiter assays, and the antimicrobial potential was tested using the microdilution assay for eight microorganisms. These extracts were further tested on three different cancer cell lines (A549, HepG2 and MCF-7) at increasing concentrations (1.56-200 µg/mL) for 24h/48h.

The chromatographic fingerprint revealed that among investigated compounds, the dominant compounds of *Salvia* species are rutin (1357.9 - 4070.2 µg g⁻¹) and catechin (1112.6 - 1911.1 µg g⁻¹). Concerning the enzyme inhibitory assays, both *S. officinalis* and *S. transsylvanica* extracts exhibited an important inhibitory potential against alpha-glucosidase (27.01 mmolACAE/g extract, and 25.62 mmolACAE/g extract, respectively). The most sensitive bacteria to the extracts were *Enterobacter cloacae* (MIC = 0.01 mg/mL, MBC = 0.02 mg/mL for *S. officinalis*) and *Bacillus cereus* (MIC = 0.09 mg/mL, MBC = 0.18 mg/mL), while *Penicillium funiculosum* was the most sensitive fungal strain to *S. officinalis* extract (MIC = 0.06 mg/mL, MFC = 0.12 mg/mL). From the three extracts, the *S. officinalis* extract exhibited the most potent cytotoxic effect. Interestingly, when testing on the estrogenic responsive cell line MCF-7, an increase in the viability was observed for intermediary doses which we hypothesize to be related to the estrogen-like compounds present in *Salvia* species.

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