

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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Comparative study of antiproliferative potential of three different plant species

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Cancer represents a heterogeneous group of diseases characterized by uncontrolled proliferation of cells, tissue invasion and metastasis. Despite current therapeutic strategies which include a combination of surgery, radiation and chemotherapy, cancer is second leading cause of death worldwide next to cardiovascular diseases. Therefore, the identification of new drugs with high sensitivity to cancer cells is warranted. The anticancer properties of plants and their compounds have been shown since ancient times and nowadays, there is a growing interest for identification of new plant-derived anticancer agents.

This study was designed to analyze antiproliferative potential of three different plant species, namely *Ononis spinosa* L. (Fabaceae), *Anthriscus cerefolium* (L.) Hoffm. (Apiaceae) and *Phlomis fruticosa* L. (Lamiaceae). The aerial parts of plants were collected, dried and the plant material was subjected to successive extraction with methanol and then evaporated to dryness on a rotary vacuum evaporator. The obtained methanolic extracts were used for further analysis. Cytotoxic effect of methanolic extracts on HaCaT (spontaneously immortalized human keratinocyte cell line), MCF-7 (breast cancer cell line), SiHa (cervical cancer cell line), A172 (glioblastoma cell line) and HepG2 (human hepatocellular carcinoma cell line) cells was determined by crystal violet colorimetric assay. Antiproliferative activity of methanolic extracts on glioblastoma cells was evaluated by Ki67 immunostaining.

The results showed that plant extracts reduced viability of all tested cell lines. The most active extract was the one from *O. spinosa*, indicating by the lowest IC₅₀ value. Ki67 immunostaining indicates antiproliferative activity of methanolic extracts on glioblastoma cells.

Keywords: cancer; plants; methanolic extracts; antiproliferative activity; KI-67.

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