

USB - SECTION BIOLOGY
**INSTITUTE OF BIODIVERSITY AND
ECOSYSTEM RESEARCH – BAS**



SEMINAR OF ECOLOGY - 2017
WITH INTERNATIONAL PARTICIPATION
10th ANNIVERSARY
27-28 April 2017

Програма/Program
Абстракти/Abstracts



Aim: To assess the oxidative status of three tissues of Black Sea *M. galloprovincialis*, which is known to accumulate high levels of persistent pollutants from the marine environment.

Material and Methods: One year grown specimens of *M. galloprovincialis* were used. They were obtained from maricultures, located in areas considered as "clean" and reference sites. Hepatopancreas, gills and foot from the mussels were excised. In each tissue 1) the analytical determination of Cu, Pb, Zn, Cd and Ni content was made by using atomic emission spectrometry and 2) the measurement of oxidative stress markers: lipid peroxidation (LPO), glutathione levels (GSH) and the activities of enzymes catalase (CAT), superoxide dismutase (SOD), glucose-6-phosphate dehydrogenase (G6PD) was performed spectrophotometrically.

Results: The gills showed the highest metal's accumulation (1.65 - 131.82 µg/g dry w), lower SOD activity and higher LPO level in comparison to other tested tissues. The hepatopancreas was characterized by intermediate accumulation of metals (0.30 - 106.67 µg/g dry w) and lower G6PD activity. The lowest metal content (1.6 - 53.85 µg/g dry w) was detected in foot muscle along with high SOD and G6PD activities and low LPO.

Conclusions: The results of this pilot study indicated that the different tissues of *M. galloprovincialis* accumulate different amounts of metals, as their content appears to correlate with the LPO levels as a marker of oxidative stress.

Keywords: *Mytilus galloprovincialis*, oxidative stress, Black Sea, heavy metals

P02_10

Cytotoxic activity of *Sideritis scardica* extracts and fractions on human breast adenocarcinoma cell line

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Sideritis scardica Griseb. (Lamiaceae) is a Balkan endemic species. Different types of its extracts have been shown to possess cytotoxic effect on murine melanoma B16, human leukaemia HL-60 cells, as well as C6 rat glioma cells, these effects being attributed to reactive oxygen species induction by the chemical constituents present in the studied preparations.

The aim of the present work was to investigate the cytotoxicity of extracts and fractions of the plant on human breast adenocarcinoma cell line.

Materials and methods: Hexane, chloroform and methanol extracts were prepared by sonification from commercial samples of the plant. Ethyl acetate, butanol and water fractions were obtained by the methanol extract. The effect of the extracts was tested on MCF7 human breast adenocarcinoma cell line in concentrations of 0.2, 0.1 and 0.05 mg/l. Preliminary characterization of the chemistry of the tested preparations was performed by thin layer chromatography.

Results: While marked inhibitory activity of the ethyl acetate fraction was established, no effect on cell growth was recorded upon methanol and butanol preparations treatments. The TLC characterization of the samples showed that while a mixture of phenyethanoid (verbascoside) and flavonoid (isoscuteallarein and hypolaetine type) diglycosides were characteristic for the total methanolic extract and butanol fraction, the ethylacetate fraction exhibited predominantly the presence of only the two flavonoid diglycosides.

Conclusion: The results are indicative of the possible selectivity of the latter compounds towards the tested cell lines and might provide evidence on the mechanism of action of the different polyphenolics present in the aerial parts of Balkan endemic *Sideritis scardica*.

Acknowledgements: This work was partially financed by the PhytoBalk project (BSRP, grant No. IZEBZ0_142989)