

13th INTERNATIONAL
CONGRESS
OF THE SERBIAN SOCIETY
OF TOXICOLOGY



1st TOXSEE
REGIONAL
CONFERENCE

Present and Future of toxicology: Challenges and opportunities



10 - 12 May, 2023 Belgrade

electronic

ABSTRACT
BOOK

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DEAR COLLEAGUES, DEAR FRIENDS,

We are delighted to greet you on the **13th International Congress of the Serbian Society of Toxicology & 1. TOXSEE Regional Conference - Present and Future of toxicology: challenges and opportunities**, organized in Belgrade from 10-12 May 2023.

Five years after our last international Congress we gathered in Belgrade, to further promote contemporary toxicology, in the broadest sense of meaning, as a response to the new challenges requiring innovative approaches and solutions, as it is understood in the third decade of the XXI century.

Initial concept, to blend the top scientific level in toxicology with the potentials of its' use in broad array of clinical and other domains, proved to be right. Line-up of more than 70 first class international and regional faculties as well as best Serbian scientists and toxicology professionals in all related domains fully justify the approach. Moreover, interest and presence of more than 250 colleagues from Serbia and region witness that our professional community has recognized the approach taken and shown vast interest.

The Serbian Society of Toxicology is committed to innovation and creativity in research and education, in cooperation with collegial associations and institutions in Serbia and abroad. As a regional leader, we developed and inaugurated the regional brand TOXSEE, with the idea to gather as much as possible expertise and know-how from the region and Europe, to capture knowledge, share experience and exchange practical skills with colleagues who deal with toxicology problems daily.

Time imposes on us the need to integrate science, top knowledge and daily practice in a quality and efficient way, to contribute to the better health of the society as a whole in the most purposeful manner. Therefore, a thematic and functional connections with domains of emergency medicine, general medicine, paediatrics, ecology, in addition to already standard toxicological disciplines i.e. clinical, forensic, occupational, and experimental toxicology have been enhanced.

We are glad to host you in a pleasant atmosphere of Belgrade in mid-May, to benefit from the attractive and dynamic program, exchange knowledge, and, equally important, to refresh existing and establish new contacts with colleagues and friends, while enjoying our hospitality and cherish the moment in one of the best partying cities of Europe.

YOU ARE MOST WELCOME!!!



Prof. dr Petar Bulat

- *President of the STC*
- *President of the 13th STC Congress*

Petar Bulat



Prof. dr Biljana Antonijević

- *President of the CSC*
- *of the 13th STC Congress*

B. Antonijević



Prof. dr Predrag Vukomanović

- *President of the COC*
- *of the 13th STC Congress*

P. Vukomanović

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CONGRESS
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IMPACT OF WASTEWATER EFFLUENTS AT TWO SITES AT DANUBE RIVER: GENOTOXICOLOGICAL ASSESSMENT

ECOTOXICOLOGY

Jovana Kostić-Vuković¹, Karolina Sunjog¹, Stoimir Kolarević², Željka Višnjic-Jeftić¹,
Srđan Subotić³, Jelena Đorđević Aleksić¹, Mirjana Lenhardt^{1,2}, Branka Vuković-Gačić⁴

1 University of Belgrade, Institute for multidisciplinary research, Department of biology and inland waters protection, Kneza Višeslava 1, 11000 Belgrade, [Serbia](#)

2 University of Belgrade, Institute for biological research "Siniša Stanković", National Institute of Republic of Serbia, Department of hydroecology and water protection, Bulevar despota Stefana 142, 11000 Belgrade, [Serbia](#)

3 University of Belgrade – Faculty of biology,
Chair of animal ecology and zoogeography, Studentski Trg 16, 11000 Belgrade, [Serbia](#)

4 University of Belgrade – Faculty of biology, Chair of microbiology,
Center for genotoxicology and ecogenotoxicology, Studentski Trg 16, 11000 Belgrade, [Serbia](#)

One of the most severe threats to the Danube River course through Serbia is the direct discharge of untreated wastewater. In biomonitoring studies, faecal indicator bacteria are used to reveal the presence of untreated communal wastewater, while biomarker response in indigenous biota serves as a useful indicator of their harmful potential. The objective of this study was to estimate the genotoxic potential of untreated communal wastewater at two sites on the Danube River, Višnjica (Belgrade) and Novi Banovci, by using in situ approach in white bream (*Blicca bjoerkna* L.). A comet assay was selected to measure DNA damage in erythrocytes, liver, and gill cells, while the micronucleus test was applied to measure chromosomal aberrations in erythrocytes.

Additionally, the accumulation of 22 elements in fish liver and muscle was analysed by ICP-OES method. Simultaneous detection of total coliforms and *E.coli* in water was performed by enzyme-based Colilert-18 test (IDEXX). Comet assay revealed the highest level of DNA damage in gills at the site Novi Banovci, and in blood at the site Višnjica. The overall frequency of micronucleus at both sites was low. At both localities, the majority of analysed elements showed higher levels in the liver in comparison to muscle. Microbiological indicators confirmed the poor water quality, since at both sites water was categorised as critically to strongly polluted. The results of this study highlighted the importance of in situ biomonitoring approach and the need for more effective management of natural resources and implementation of wastewater treatment systems.

KEYWORDS: ecogenotoxicology, river, monitoring