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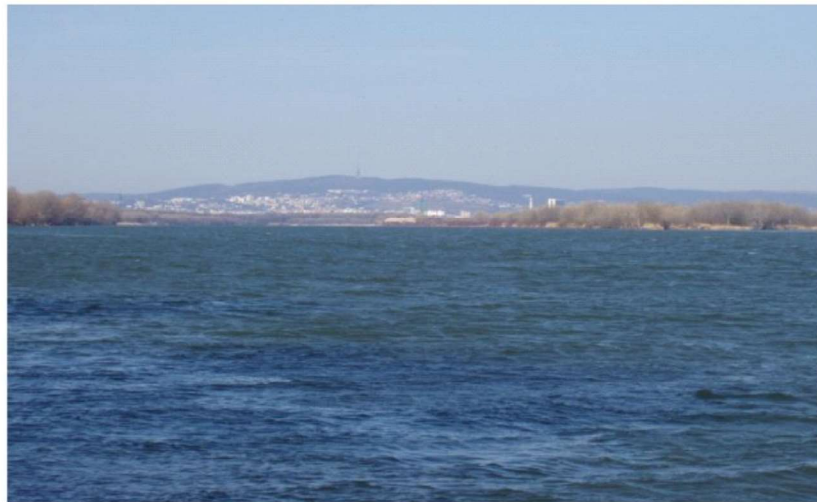
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**DANUBE - A LIFELINE GOVERNED BY MULTIPLE USES,  
PRESSURES AND A MULTITUDE OF ECOSYSTEM SERVICES**

# **Book of Abstracts**

**Editors: Milan Lehotský, Anna Kidová, Miloš Rusnák, Jozef Dudžák**

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## Assessment Of Genotoxic Potential Of The Velika Morava River Basin

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The Danube River is highly affected by human activity. Wastewaters discharging into the Danube River stream are one of the major problems, especially at Croatia-Serbia river section. The Velika Morava River is the greatest Serbian river and a significant tributary of the Danube River. Consequently, the water quality of the Velika Morava River could have a great impact on the water quality of the Danube River.

In this study, the level of genotoxic potential along the Velika Morava River Basin was evaluated by using a battery of *in vitro* and *in situ* bioassays. Within the *in vitro* approach, SOS/*umuC* test on *Salmonella thyphimurium* TA1535/pSK1002 and the comet assay on HepG2 cell line were employed for genotoxicity testing of native water samples. The level of DNA damage on erythrocytes of bleak specimens (*Alburnus alburnus*) was observed using the alkaline and Fpg modified comet and micronucleus assays within *in situ* testing. The concentration of toxic metals in fish tissues and physico-chemical water status were chosen as parameters of pollution pressure on selected sites.

Obtained results indicated lower sensitivity of selected *in vitro* tests when compared to *in situ*. Also, the tests using the *in situ* approach showed a range of sensitivity. Namely, the alkaline comet assay showed a greater potential than Fpg modified comet test and micronucleus assay in distinguishing between sites. According to results, application of complex bioassays battery was shown as a better choice in eco/genotoxicological studies than using only one bioassay. In that way, a holistic approach is appropriate for this type of study.

**Keywords:** genotoxic potential, *in vitro* bioassays, *in situ* bioassays, holistic approach, water pollution.