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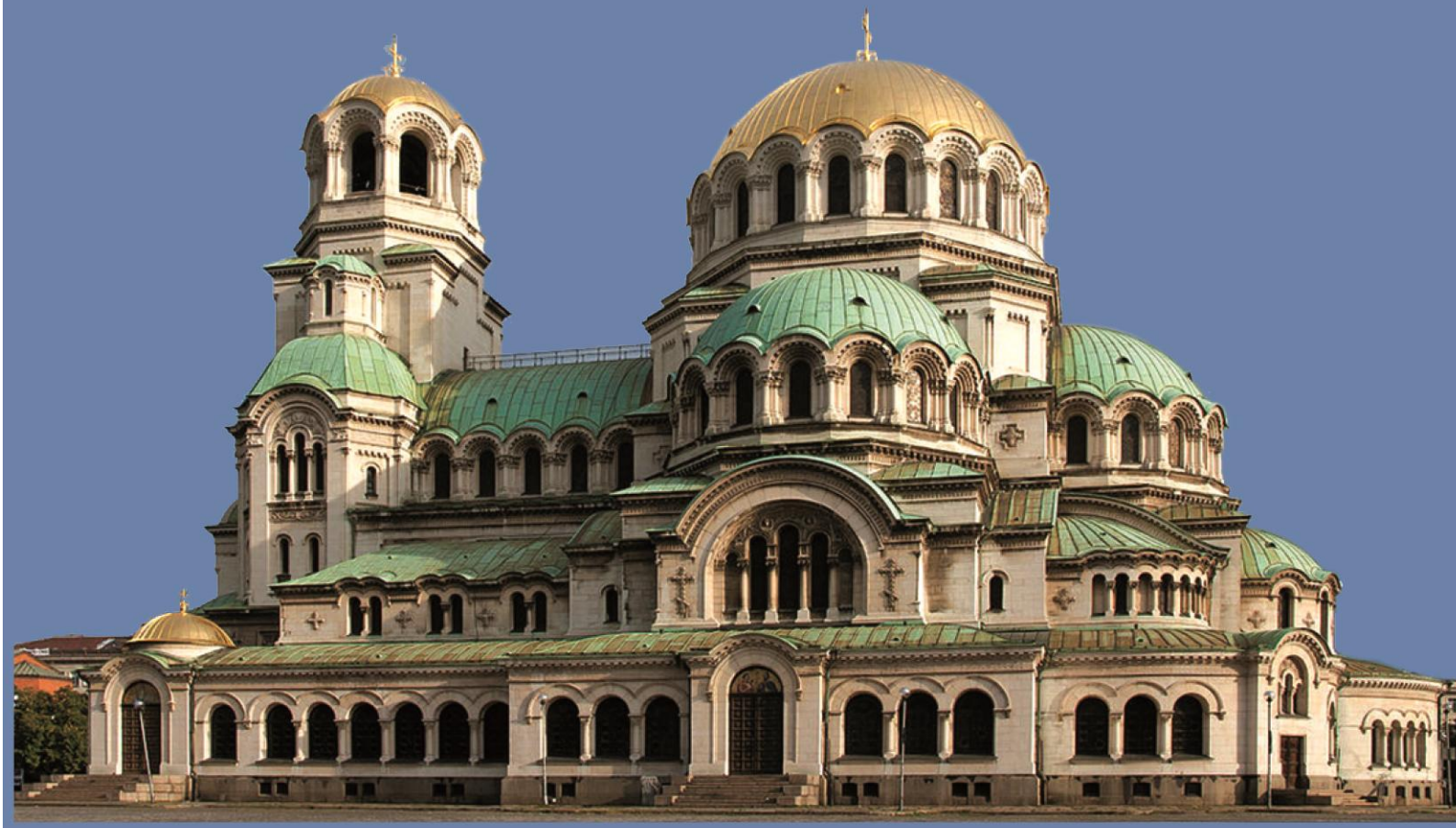

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ABSTRACTS

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EnvM-20

APPLICATION OF SOS/*UMUC* ASSAY IN ECO/GENOTOXICOLOGY

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Introduction. The SOS/*umuC* assay is used for assessment of water genotoxicity. *Salmonella typhimurium* TA1535/pSK1002 is used in this test, but the results can be extrapolated on higher eukaryotic organisms with the introduction of enzymatic S9 fraction in experimental procedure. The test is standardised for the determination of the genotoxic potential of water and wastewater (ISO/DIS 13829, 2000).

Aim. Sensitivity of the assay was challenged by using parallel *in situ* and *in vitro* approach in evaluation of the genotoxic potential in the basins of significant tributaries of the Danube River: the Sava River and the Velika Morava River.

Materials and methods. Within *in vitro* testing, native water samples were analysed by SOS/*umuC* test. DNA damage *in situ* was assessed in bleak (*Alburnus alburnus*) erythrocytes by the comet and micronucleus assays. The concentration of heavy metals in fish tissue and the data of the physico-chemical parameters measured in water were used as a measure of the pollution pressure at the sites.

Results. Results showed that applied *in vitro* tests with native water samples are less sensitive in comparison with *in situ* tests. None of 20 investigated samples showed genotoxic potential in SOS/*umuC* assay while *in situ* analyses indicated variation of genotoxic potential among the investigated sites.

Conclusions. The results of our study point towards low sensitivity of the SOS/*umuC* test when processing un-concentrated (native) water samples; the results of *in vitro* tests should be taken with precaution when making predictions on the status of the ecosystem.

Keywords. eco/genotoxicology, water pollution, SOS/umuC, comet assay, DNA damage