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P 76 Evaluation of genotoxic pressure along the Sava River

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In this study we have performed a comprehensive genotoxicological survey along the 900 km of the Sava River – the major drainage basin of the Southeastern Europe and the greatest tributary to the Danube River with 945 km long and 97,713 km large catchment's area extending over Slovenia, Croatia, Bosnia and Herzegovina and Serbia. In total, 12 sites were chosen in compliance with routine monitoring program of the basin member states.

The genotoxic potential was assessed by the complex battery of bioassays performed in prokaryotes and aquatic eukaryotes (freshwater fish). Battery comprised evaluation of mutagenicity by SOS/*umuC* test in *Salmonella typhimurium* TA1535/pSK1002. The level of DNA damage as biomarker of exposure (comet assay) and biomarker of effect (micronucleus assay) and the level of oxidative stress as well (Fpg-modified comet assay) was studied in blood cells of bleak (*Alburnus alburnus /Alburnoides bipunctatus*).

We wanted to investigate whether the variation in genotoxic potential along the river can be linked to hotspots of faecal and industrial pollution. Hotspots of faecal pollution were identified by bacterial indicators (*Escherichia coli* numbers) while hotspots related to industry were identified by assessment of concentration of metals in tissue of bleak.

The results indicated presence of genotoxic potential along the river resulted from recent or prolonged exposure to genotoxic pressure which can be traced to deterioration of quality of Sava River by urban/industrial wastewaters. The major highlight of the study is that we have provided complex set of data obtained from a single source (homogeneity of analyses for all samples).