

Joint EEMGS meeting & International Comet Assay Workshop



May 23rd – 26th 2022
Maastricht, The Netherlands

*Including discussion forums, young scientist sessions,
allocated poster sessions and informal gatherings
on the riverbanks of the Maas.*

*Hosted by Maastricht University's
departments of Pharmacology & Toxicology and Toxicogenomics,
and financially supported by the Limburg University Fund/SWOL*



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CONFERENCE GUIDE

Welcome at the 14th International Comet Assay Workshop (ICAW) & 50th meeting of the European Environmental Mutagen and Genomics Society (EEMGS)

The International Comet Assay Workshops are a series of scientific conferences dealing with practical and theoretical aspects of the Comet Assay, aimed at both experienced and new users of this technique. The Workshop has always been rather informal. It began as a satellite meeting to the 2nd International Conference on Environmental Mutagens (ICEM) in 1995, but continued every 2 years after that. Unfortunately, the meeting was postponed in 2021 due to the covid19 pandemic. Also the annual meetings of other societies/ interest groups were postponed and we are therefore happy that we can now join up here in Maastricht. Therefore, this meeting is a joined meeting of ICAW, the Dutch Environmental Mutagen Society (DEMS), the Belgian Environmental Mutagen Society (BEMS) and the European Environmental Mutagen & Genomics Societies (EEMGS).

In 2020, former ICAW organizers, together with hCOMET COST-Action (CA15132) members, created the International Comet Assay Working Group (ICAWG). This group became an affiliated working group of the European Environmental Mutagenesis & Genomics Society (EEMGS) since 2020. ICAWG exists to unite those scientists working in the field of genetic toxicology, DNA damage and DNA repair with interest in the comet assay (a.k.a. single cell gel electrophoresis). It encompasses research into the mode-of-action of genotoxic agents and associations of genome instability markers with disease outcomes, and applications of this knowledge in the field of regulatory toxicology, biomonitoring studies, (nutritional) interventions as well as clinical studies. Studies into the impact of genotoxic agents on genome stability in organisms other than man – a field known as ecogenotoxicology – is also gaining attention.

P39 Genotoxicity of European chub (*Squalius cephalus* L. 1758) erythrocytes as an effective indicator in monitoring of water bodies under different pollution pressure

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The objective of our study was to investigate ecological status of two water bodies in Serbia, Lake Kruščica, and River Ibar. The comet assay was selected as an *in vivo* and *in situ* test for measuring DNA damage in chub's erythrocytes, as an bioindicator of genotoxic potential of water. We have also investigated physico-chemical parameters and microbiological indicators (coliforms, *E.coli*) as parameters for general pollution pressure and a basis for determination of ecological status of these water bodies. Lake Kruščica is a protected natural area of great importance with very low or none anthropogenic impact, used as a drinking water source. River Ibar is under intensive multisource pressure pollution consisted of: communal untreated waters, industrial, agricultural and mining activities. Specimens of chub analyzed in this study naturally inhabit these water bodies, which gave us an excellent opportunity to compare protected site with site where mixture of various xenobiotics from water have a direct and adverse impacts over period of time. According to physico-chemical parameters and microbiological indicators, Lake Kruščica falls into the first category of ecological status, while River Ibar showed poor to critical water quality. DNA damage in chub erythrocytes was significantly higher at River Ibar compared to Lake Kruščica, which indicates the notable difference in pollution pressure. Given its tolerance to anthropogenic perturbations, and its cosmopolite distributions, chub gives an advantage for extensive studies of genotoxicity dynamics of freshwater systems.