

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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The Team

Co-Chairs of ICAW/EEMGS 2022



Sabine Langie



Roger Godschalk



Simone van Breda

Scientific committee

Amaya Azqueta (*Spain*)
Elisa Boutet-Robinet (*France*)
Paul Fowler (*UK*)
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Goran Gajski (*Croatia*)
Marko Gerić (*Croatia*)
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Sabine Langie (*Belgium*)
Matjaz Novak (*Slovenia*)
Bertrand Pourrut (*France*)
Marie Vasquez (*USA*)
Sona Vodenkova (*Czech Republic*)

Instructors of the hands-on training session

Amaya Azqueta and Miguel Collía Martín
University of Navarra, Spain

Martina Stampar and Matjaž Novak
National Institute of Biology, Slovenia

Sabine Langie, Roger Godschalk and Shan Wang
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P15 Evaluation of genotoxic potential of the middle section of the Danube River and its major tributaries

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The middle section of the Danube River basin in the previous three Joint Danube Surveys (JDS) was found to be under intensive pollution, mainly affected by wastewaters. As a consequence of the lack of wastewater treatment plants, complex xenobiotics mixtures may get into surface water and decrease water quality and organisms' health. Some xenobiotics may induce different types of DNA damage. Hence, DNA damage could be a useful biomarker in the detection of "early warning signals" of organisms' exposure to genotoxic compounds, while the usage of bioassays batteries can provide better insight into a genotoxic potential. This study was conducted in 2019, during the JDS4 expedition, to assess the genotoxic potential of nine sites on the section of the Danube River which goes through Serbia and its major tributaries: the Sava, Tisza and Velika Morava. Blood and muscle of *Alburnus alburnus* (bleak) were used for genotoxicity assessment by comet, micronucleus and RAPD assays. In comet assay, the highest level of DNA damage was recorded at the Velika Morava mouth (JDS 39) and on the Danube River, downstream Radujevac (JDS 41). The highest frequency of micronucleus was recorded at the Sava mouth (JDS 36) and on the Danube River, downstream Pančevo (JDS 37). The lowest level of DNA damage in both tests was recorded on the Sava, site Jamena (JDS 35). The RAPD analysis distinct three major groups: Tisza mouth (JDS 33) and sites on the Sava (JDS 35, JDS 36), then two sites on the Danube River (JDS 37, JDS 41) and one site on the Danube River, Ram (JDS 40) with the Velika Morava mouth (JDS 39). Analyzed bioassays showed different sensitivity where the comet assay had the highest potential in discrimination of sites based on genotoxicity. Bleak was proved to be a reliable bioindicator in eco/genotoxicological studies.