

Holistic exposure and effect potential assessment of complex chemical mixtures in the aquatic environment

Project name	Holistic exposure and effect potential assessment of complex chemical mixtures in the aquatic environment
Registration number	GX20-04676X
Realization date	1. 1. 2020 – 31. 12. 2024
Recipient	University of South Bohemia in České Budějovice Faculty of Fisheries and Protection of Waters
Other recipients	Masaryk University, Faculty of Science
Grant program	Czech Science Foundation - Grant projects of excellence in basic research EXPRO
Responsible solver	Assoc. Prof. Mgr. Roman Grabic, Ph.D.

PROJECT ANNOTATION

The project will develop a conceptual approach to risk assessment of chemical mixtures and obtain important information on the occurrence of new and priority bioactive substances present in surface waters.

PROJECT GOALS

The project will develop a conceptual framework for risk assessment of chemical mixtures and improve understanding of the cumulative risk from regulated and emerging bioactive chemicals present in surface waters. The methodology will combine innovative methods for exposure characterization using passive sampling, with bioanalytical tools for identifying its potential effects. A newly developed battery of high-throughput bioassays will address crucial mixture effects on endocrine disruption and (neuro)development, and focus also on relevant but little explored mechanisms of action including disruption of thyroid hormone signalling. Combination of high-throughput target and nontarget analyses using advanced high-resolution mass spectrometry together with fractionation and pull-down approaches will enable to characterize complex pollution scenarios and identify responsible effect drivers. The predictability of the bioanalytical responses towards real environmental situation will be assessed by investigation of in situ chemical impacts on exposed fish and invertebrates.



PROJECT BUDGET

	Amount CZK
Total approved costs	49 686 thou. CZK
Public financial support	49 686 thou. CZK
Other public sources	0 thou. CZK
Non public and foreign sources	0 thou. CZK

CONTACT



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