Bioaccumulation dynamics of emerging contaminants in aquatic invertebrates using marbled crayfish

Project name	**Bioaccumulation dynamics of emerging contaminants in aquatic invertebrates using marbled crayfish**
Registration number	GA23-07274S
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Recipient	University of South Bohemia in České Budějovice Faculty of Fisheries and Protection of Waters
Grant program	Czech Science Foundation - Standard projects
Responsible solver	Doc. Ing. Vladimír Žlábek, Ph.D.

PROJECT GOALS

Pharmaceuticals are designed to be highly bioactive at low doses in human or animals, but their bioaccumulation dynamics is less studied in invertebrates. Freshwater crayfish have a prominent role in aquatic ecosystems and pose important segments of the trophic web. Marbled crayfish (Procambarus virginalis) pose a unique biological feature with potential as an alternative experimental model to advance the 3Rs strategy of animal welfare. The primary aim of the study is description of a predictive crayfish bioaccumulation model based on empirical measurements of pharmaceuticals kinetics by advanced analytical methods. Specifically, the experimental design will estimate key bioconcentration parameters in crayfish exposed to a model acid (diclofenac), base (diphenhydramine) and neutral molecules (carbamazepine) using first order kinetics. The ecotoxicological responses, such as biochemical and behavioral effects will be determined in exposed organisms. The project will conclude with comparative analysis of crayfish bioaccumulation model dynamics with models already employed for fish.

PROJECT BUDGET

	Amount CZK
Total approved costs	7 535 thou. CZK
Public financial support	6 955 thou. CZK
Other public sources	580 thou. CZK
Non-public and foreign sources	0 thou. CZK

CONTACT

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