BIOTOXMET PROJECT

overview after second project period

(28. 12. 2021. - 27. 6. 2023.)

PI: Vlatka Filipović Marijić

Ruđer Bošković Institute

THIRD MEETING

Integrated evaluation of aquatic organism responses to metal exposure: gene expression, bioavailability, toxicity and biomarker responses (BIOTOXMET)

Zagreb, 19th May 2023

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RB

ANDRIJA STAMPAR TEACHING INSTITUTE OF PUBLIC HEALTH

WELLFISH DIAGNOSTICS

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FFoQSI FEED AND FOOD QUALITY SAFETY AND INNOVATION

BIOTOXMET

PROJECT COLLABORATORS

Ruđer Bošković Institute – Division for Marine and Environmental Research, Zagreb, Croatia

Dr. sc. Irena Vardić Smrzlić

Dr. sc. Dušica Ivanković

Dr. sc. Damir Valić

Dr. sc. Zrinka Dragun

Dr. sc. Tatjana Mijošek

Zuzana Redžović, M.Sc.Exp.Biol.

Ivana Karamatić, mag. ing. techn. aliment.

Dr. sc. Tomislav Kralj

Sara Šariri, PhD student

Dr. sc. Željka Fiket

28.12.2020.-27.12.2024.

1st project period 28.12.2020.-27.12.2021.

2nd project period 28.12.2021.-27.6.2023.

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PROJECT COLLABORATORS

- **Institute for Medical Research and Occupational Health, Zagreb, Croatia**

Dr. sc. Zorana Kljaković-Gašpić

Andrija Stampar Teaching Institute of Public Health, Zagreb, Croatia

Dr. sc. Želimira Cvetković

- **Wellfish Diagnostics, Paisley, UK**

Dr. sc. Josip Barišić

- **University of Leoben, Leoben, Austria**

Dr. sc. Thomas Prohaska

Dr. sc. Donata Bandoniene

Dr. nat. techn. Johanna Irrgeher

- **Austrian Competence Centre for Feed and Food Quality, Safety & Innovation, Tulln, Austria**

Dr. sc. Andreas Zitek

PROJECT GOALS

1. seasonal and long-term trends of metal concentrations in the water and sediments of the Krka River and its tributaries

2. biological responses of aquatic organisms to metal exposure/impact under different environmental conditions

3. bioavailable and potentially toxic fraction of dietborne metals in fish

4. active cellular processes in acanthocephalans and fish intestine under different metal exposure regimes

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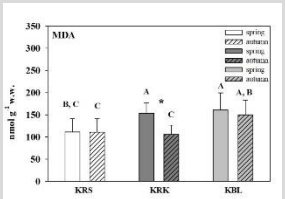
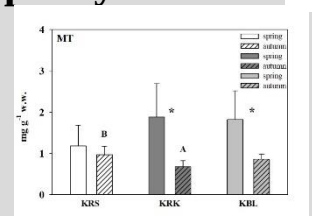
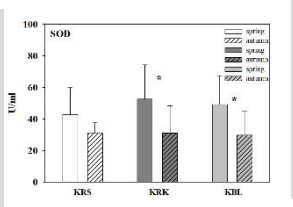
Work plan – 2nd project period

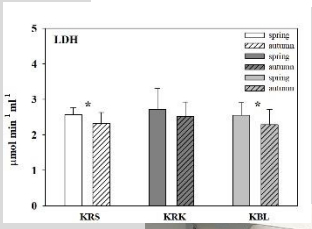
2nd Project period

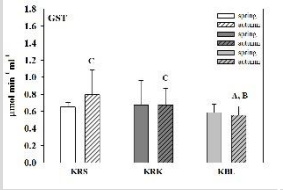
Results to be achieved	Team member
2.1. Biomarkers in the fish intestine and metallothioneins in acanthocephalans determined, reports on the analyzed results prepared for: **a) biomarkers of antioxidative defense** **b) biomarkers of metal exposure** **c) biomarker of metabolic tissue capacity**	T. Mijošek Z. Redžović D. Ivanković I. Karamatić V. Filipović Marijić S. Šariri (Y. Al Marsoomi)

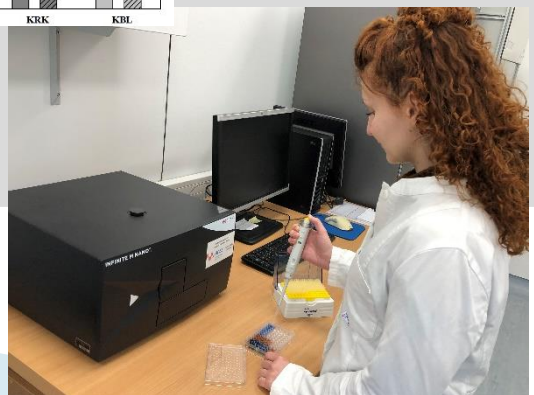












Biomarker changes with respect to different pollution impact and other environmental conditions compared

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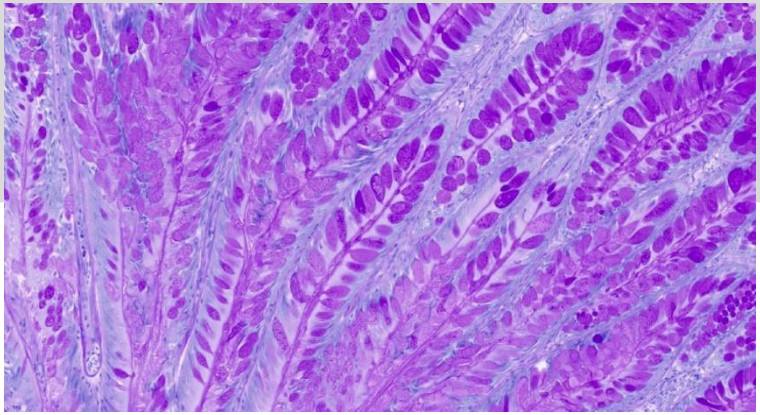
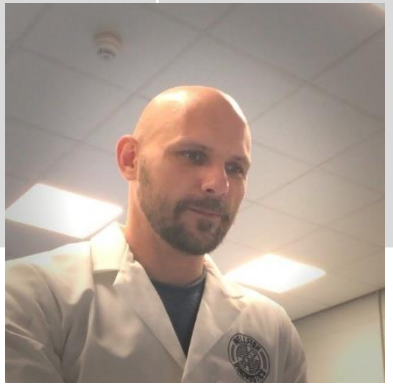
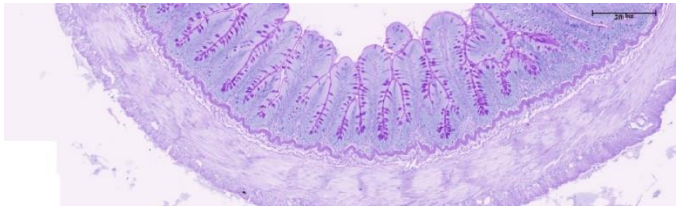
Work plan – 2nd project period

2nd Project period	
Results to be achieved	**Team member**
2.2. Histopathological changes in fish intestine determined, data analyzed and report prepared on application of mucosal cells as novel histopathological markers	J. Barišić





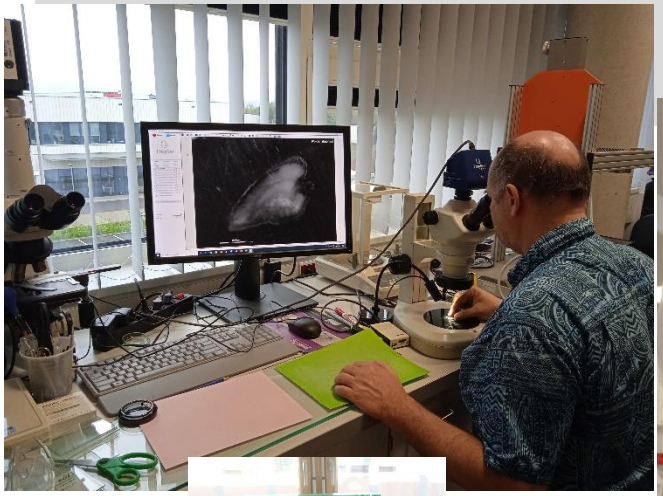


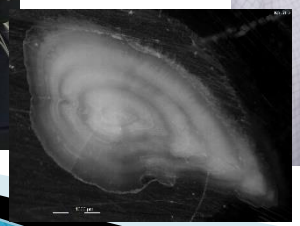
Work plan – 2nd project period

2nd Project period	
Results to be achieved	**Team member**
2.3. Total metal concentrations in fish muscle, intestine and acanthocephalans determined, reports on the analyzed results with respect to different pollution impact and other environmental conditions (water level, sedimentation intensity, physico-chemical water parameters, seasons) prepared	Z. Dragun Z. Kljaković Gašpić T. Mijošek S. Šariri

Work plan – 2nd project period

2nd Project period	
Results to be achieved	**Team member**
2.4. Metal concentrations in fish scales and otoliths determined, report on the long-term metal exposure over fish growth zones prepared	T. Prohaska A. Zitek J. Irrgeher D. Bandoniene S. Šariri





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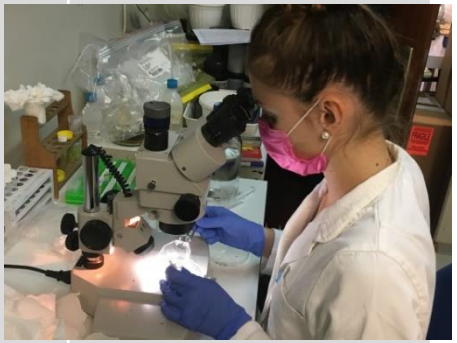
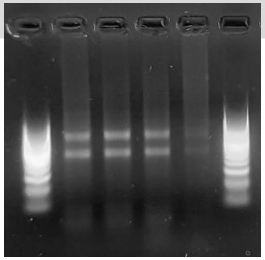
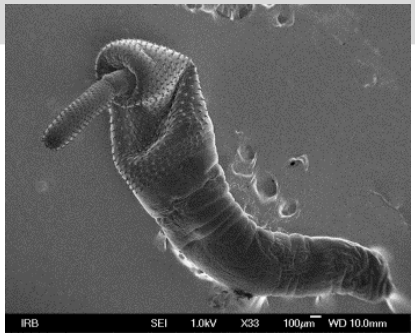
Work plan – 2nd project period

2nd Project period	
Results to be achieved	**Team member**
2.5. Expression of target genes in RT-qPCR reactions analysed in order to confirm acanthocephalan transcriptome analyses, report prepared	I. Vardić Smrzlić S. Šariri
D2.6 RNA of appropriate concentration and quality extracted from fish intestine for transcriptome profiling, report prepared	
D2.7 Transcriptome and gene expression profiling in fish intestine analysed, report prepared on differences in gene expression from the reference and pollution impacted site	







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Work plan – 3rd meeting

Annual project meeting held (Zagreb, RBI)	**All team members**

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THANK YOU FOR YOUR ATTENTION