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Emerging contaminants in Brazilian rivers: Occurrence and effects on gene expression in zebrafish (*Danio rerio*) embryos

Juliana C.V. Sposito, Cassiana C. Montagner, Marta Casado, Laia Navarro-Martín, Julio César Jut Solórzano, Benjamin Piña, Alexeia B. Grisolia



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1 **Emerging contaminants in Brazilian rivers: Occurrence and effects on gene expression in zebrafish**
2 **(*Danio rerio*) embryos**

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4 Juliana C. V. Sposito^a, Cassiana C. Montagner^b, Marta Casado^c, Laia Navarro-Martín^c, Julio César Jut
5 Solórzano^d, Benjamin Piña^e, Alexeia B. Grisolia^e

6

7 ^a Faculty of Exact Sciences and Technology, Federal University of Grande Dourados/UFGD, Dourados,
8 MS, Brazil.

9 ^b Environmental Chemistry Laboratory, Institute of Chemistry, University of Campinas, Campinas, São
10 Paulo, Brazil.

11 ^c Department of Environmental Chemistry, IDAEA-CSIC, Jordi Girona 18-26, 08034 Barcelona, Spain.

12 ^d State University of Mato Grosso do Sul/UEMS, Dourados, MS, Brazil.

13 ^e Faculty of Biological and Environmental Sciences, Federal University of Grande Dourados/UFGD,
14 Dourados, MS, Brazil.

15 Corresponding author. E-mail address: alexeiagrisolia@ufgd.edu.br. Phone number: +55 (67) 34102223.

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17 **Highlights**

- 18 • The occurrence of emerging contaminants (ECs) was investigated in rivers in the southern region
19 of Mato Grosso do Sul, Brazil
- 20 • We evaluated the potential toxicity of ECs mixtures on gene expression in zebrafish embryos
- 21 • ECs mixtures at three different sampling sites induced the expression of *cat*, *cyp19a1b*, and
22 *cyp1a*

23

24 **Abstract**

25 Emerging contaminants (ECs) are synthetic or naturally occurring chemicals that are not commonly
26 monitored despite having the potential of entering the environment and causing adverse ecological and/or
27 human health effects. This study aimed to determine whether ECs are present in the surface waters of two
28 rivers in Mato Grosso do Sul State, Brazil, and evaluate the effects of ECs mixtures at environmentally
29 relevant concentrations on zebrafish (*Danio rerio*) gene expression. ECs concentrations were determined
30 using solid-phase extraction and liquid chromatography-mass spectrometry. The ECs most frequently

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