

Poster Communication 66

## Ecotoxicological effects of nadifloxacin on the swimming behaviour of *Daphnia magna*

**Renata Vidal**<sup>1,2,\*</sup>, **Ana Rita Carvalho**<sup>1,2,3,6</sup>, **Maria E. Tiritan**<sup>4,5</sup>, **Igor E. Oliveira**<sup>4</sup>, **Bruno B. Castro**<sup>6</sup>, **Virgínia M. F. Gonçalves**<sup>1,2,7</sup>, **Alexandra S. Maia**<sup>1,2</sup>, **Ana Rita L. Ribeiro**<sup>3</sup> and **Cláudia Ribeiro**<sup>1,2</sup>

<sup>1</sup> Associate Laboratory i4HB – Institute for Health and Bioeconomy, University Institute of Health Sciences - CESPU, Gandra, Portugal

<sup>2</sup> UCIBIO – Applied Molecular Biosciences Unit, Translational Toxicology Research Laboratory, University Institute of Health Sciences (1H-TOXRUN, IUCS-CESPU), Gandra, Portugal

<sup>3</sup> LSRE-LCM, ALiCE, Faculty of Engineering, University of Porto, Porto, Portugal

<sup>4</sup> Laboratory of Organic and Pharmaceutical Chemistry, Department of Chemical Sciences, Faculty of Pharmacy, University of Porto, Porto, Portugal

<sup>5</sup> CIIMAR – Interdisciplinary Centre of Marine and Environmental Research, University of Porto, Matosinhos, Portugal

<sup>6</sup> CBMA - Centre of Molecular and Environmental Biology/ARNET – Aquatic Research Network, Department of Biology & Institute of Science and Innovation for Bio-Sustainability (IB-S), University of Minho, Braga, Portugal

<sup>7</sup> UNIPRO – Oral Pathology and Rehabilitation Research Unit, University Institute of Health Sciences (IUCS-CESPU), Gandra, Portugal

\* Correspondence: renatavidal8@gmail.com

### Abstract

**Background:** Nadifloxacin (NDFX) is a chiral fluoroquinolone widely used as a topical treatment for inflammatory acne lesions [1] and is frequently detected in aquatic environments due to its persistence and inefficient removal in wastewater treatment plants [2, 3]. Its environmental presence raises concerns about potential enantioselective effects on non-target aquatic organisms. However, toxicity data for freshwater invertebrates such as *Daphnia magna* remain scarce, highlighting the need to evaluate its potential ecological risks. **Objective:** This study aimed to assess the potential sub-chronic effects of NDFX racemate and its individual enantiomers on *Daphnia magna* by evaluating swimming behaviour endpoints. **Methods:** Sub-chronic exposure assays initiated using neonates (<24 h) exposed for 9 days to 100 µg.L<sup>-1</sup> of racemic NDFX or each isolated enantiomer. Each treatment consisted of 5 replicates, with 20 organisms per replicate. After the exposure period, swimming behaviour endpoints (swimming speed, swimming activity, and total distance travelled) were assessed through the analysis of 1-min video recordings. **Results:** No significant changes in swimming behaviour endpoints were observed in organisms exposed to either NDFX racemate or its isolated enantiomers. **Conclusions:** Overall, NDFX exposure did not cause significant changes in swimming behaviour in *Daphnia magna*, and no enantioselective effects were observed under the tested conditions. Further studies are required to clarify the potential mechanisms of NDFX toxicity in aquatic organisms.

**Keywords:** nadifloxacin; *Daphnia magna*; swimming behaviour

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