

USING BIOMARKERS TO IDENTIFY OXIDATIVE STRESS RESPONSE IN ZEBRAFISH (*Danio rerio*) FED WITH MICROPLASTICS (FRAGMENTS AND VIRGIN PELLETS)

Autiero A.^{1,2}, Martínez I.¹, Navarro A.¹, Bautista-Gea A.¹, Almeda R.¹, Packard T.T.¹,
and Gómez M.¹, Maria João Rocha^{2,3}, Herrera A.¹

¹Marine Ecophysiology Group (EOMAR). IU-ECOQUA, Universidad de Las Palmas de Gran Canaria, Canary Islands, Spain

²Laboratory of Histology and Embryology, Department of Microscopy, Institute of Biomedical Sciences Abel Salazar (ICBAS), University of Porto (U. Porto), Portugal

³Team of Histomorphology, Physiopathology and Applied Toxicology, Interdisciplinary Centre of Marine and Environmental Research (CIIMAR), U. Porto, Portugal

up201801938@edu.icbas.up.pt, ico.martinez@ulpgc.es, alberto.navarro106@alu.ulpgc.es, arianna.bautista101@alu.ulpgc.es, rodrigo.almeda@ulpgc.es theodore.packard@ulpgc.es, may.gomez@ulpgc.es, mjrocha@icbas.up.pt, alicia.herrera@ulpgc.es.

The widespread use of plastics correlated with its potential toxic effects is an emerging problem today. Thus, we aimed to test the hypothesis that pairing a commercial fish flake with a 10% microplastic diet can be associated to an increased amount of oxidative stress in adult zebrafish (*Danio rerio*). The induction of stress response pathways is an important indicator of the presence of chemical and non-chemical stressors in cells. To do so, four different treatments were prepared to feed daily and at scheduled time the animals that were divided into 12 distinct tanks, each one with 36 animals. The first treatment was with normal fish flake (A); the second one was with virgin pellet (B); the third one was with collected microplastics at Lambra's beach in Lanzarote (C) and the fourth contained microplastic collected at Porís' beach in Tenerife (D). Three replicates of each diet were prepared to compare a possible oxidative response difference among the treatments with the control. At T₀, T₇ and T₃₀ we used biomarkers such as catalase (CAT), glutamate S-transferase (GST) and lipid peroxidation (LPO) to analyse the animal's muscular tissue. We used a spectrophotometer to evaluate the variation of oxidative stress accumulated. Data analysis revealed that the activity of antioxidant enzymes of GST seems to increase throughout the study, especially in the muscular tissue of the MPs- fed group in comparison with the control and that the activity of CAT and LPO show no significant difference. Further, we weighted and measured the length of animals at T₀, T₇ and T₃₀. Results show that animals exposed to collected MPs experienced a slight loss of weight while the longitude remained stable. In conclusion, MPs exposure during 30 days has affected weight increase in *Danio rerio* and may have induced an oxidative stress response.

Key words: Water pollution, plastic particles, *Danio rerio*, biomarkers, oxidative stress

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