

IMPACTO DO MICROPLÁSTICO E ELEVAÇÃO DA TEMPERATURA SOBRE A CAPACIDADE DE DEFESA CELULAR E TAXA NATATÓRIA DE *Aurelia* sp. (SCYPHOZOA)

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INTRODUCTION:Global warming and microplastic (MP) pollution have been identified as emerging threats to aquatic biota. Among the defense mechanisms against xenobiotics, the efflux mediated by ABC (ATP Binding Cassette) proteins stands out. *Aurelia* sp., a jellyfish species, has proven to be a useful model for toxicology studies at different developmental stages. This study investigated the effects of microplastics and increased temperature on the cellular defense capacity of polyps and medusae, as well as on the swimming rate of ephyrae and medusae. **MATERIALS AND METHODS:**Polyps, ephyrae, and medusae of *Aurelia* sp. were exposed to two temperatures (20°C and 24.3°C), under control conditions and in the presence of polyethylene at 50 µg/L. Polyps were exposed for 96h, and cellular defense capacity was assessed through the efflux of Rhodamine B, used as a fluorescent substrate. For ephyrae, 1h and 6h exposure assays were conducted, and swimming rate was determined by counting pulsations per minute in 24 well plates. For medusae, a 1h exposure was performed, evaluating both cellular defense capacity and swimming rate. Data were statistically analyzed using factorial analysis of variance (Two-Way ANOVA), followed by Tukey's post-hoc test. **RESULTS AND CONCLUSION:**In polyps, there was a significant increase in ABC protein activity after exposure to microplastics at 20°C, an effect that was inhibited at 24.3°C, indicating vulnerability to thermal stress. In ephyrae, no statistical difference in pulsation rate was observed after 1h and 6h of exposure. In medusae, microplastic exposure did not alter the swimming rate, but increased temperature led to a higher rate compared to the 20°C control. ABC protein activity was reduced by 50 ± 10% in animals exposed to microplastics at 20°C, with no difference between groups at 24.3°C, indicating compromised cellular defense under thermal stress. These results highlight that the response to environmental stress varies according to the developmental stage of *Aurelia* sp., emphasizing the importance of considering the life cycle in environmental risk assessments for cnidarians.

Keywords: Climate change; Polymer; Thermal stress; Scyphozoa.

Palavras chaves: Mudanças climáticas; Polímero; Estresse térmico; Cifomedusas.

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