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IMPACT OF CLIMATE CHANGE AND CONTAMINATION IN THE OXIDATIVE STRESS RESPONSE OF MARINE ORGANISMS

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Atmospheric carbon dioxide (CO2) levels are increasing at an unprecedented rate, changing the carbonate chemistry (in a process known as ocean acidification) and temperature of the world's ocean. Moreover, the simultaneous occurrence of highly toxic and persistent contaminants, such as mercury, will play a key role in further shaping the ecophysiology of marine organisms. Therefore, this research aimed to undertake the first comprehensive analysis of the antioxidant defense mechanisms, of several marine organisms – from invertebrate to vertebrate species – encompassing different life-stages and life-strategies to the predicted climate-mediated changes. The findings provided herein proved that organisms' responses were mostly underpinned by temperature, that also culminated into increased mercury bioaccumulation, while ocean acidification as a sole stressor usually played a minor role in defining species vulnerability (i.e. responsible for increased oxidative damage in the marine calcifying organisms G. *locusta*). Nonetheless when co-occurring with warming and contamination scenarios, acidification was usually responsible for the reduction of heavy metal accumulation and toxicity, as well as decreased warming and contamination-elicited oxidative stress. Additionally, organisms' responses were species-specific, and organisms that inhabit more variable environments (e.g. daily changes in abiotic conditions) usually displayed greater responses towards environmental change than organisms occupying more stable environments.

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12H30 | AUDITÓRIO 1

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