POSTER

ULVANS AS AN ECO-FRIENDLY TOOL TO MITIGATE CELLULAR IMPAIRMENT INDUCED BY DEXAMETHASONE IN *MYTILUS GALLOPROVINCIALIS*

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The inadequate treatment of municipal wastewater leads to the constant release into the environment of pharmaceutically active compounds (PhACs). The PhACs can induce multiple biological effects on various aquatic species compromising their welfare. Among these, dexamethasone (DEX), a synthetic glucocorticoid commonly detected in the environment, showed adverse effects on non-target organisms. Consequently, it is imperative to enhance strategies to mitigate its detrimental impact on aquatic biota. In this context, ulvans (U), polysaccharides extracted from green macroalgae (Ulva spp.), appear to exert various biological properties, mostly antioxidant and anti-inflammatory. This study aim to evaluate the action of U on mussels Mytilus galloprovincialis treated with DEX by exposure for 12 days (T12) at four experimental conditions: negative control (CTRL), 100 mg/L of U extracted by Ulva ohnoi (U100), 400 ng/L of DEX (DEX), mixture of U100 and DEX (UDEX). The effects on the antioxidant system (superoxide dismutase, SOD; catalase, CAT; lipid peroxidation, LPO; glutathione S-transferases, GST), immune response (acid phosphatase, ACP; alkaline phosphatase, ALP; phenoloxidase, PO), and energy metabolism (lactate dehydrogenase, LDH; electron transport system, ETS), were evaluated on mussel digestive gland, chosen for its role in xenobiotic detoxification. The results revealed a lack of impairments in the energy metabolism in mussels exposed to UDEX. Also, the antioxidant system results enforced by the U treatments, as confirmed by the reduction of LPO and the increase of CAT in samples from UDEX. Moreover, an improvement in the immune parameters, coupled to a lack of changes in the energy metabolism, was also observed in mussels from the same condition. Overall, the results confirm the beneficial biological properties of ulvans, thus supporting their use as eco-friendly solution against the impact of emerging contaminants, as well as their potential use as non-impactful food additives in mussel farms.