EFFECTS OF TRIBUTYLTIN (TBT) ON REDOX HOMEOSTASIS OF THE POSTERIOR GILLS OF THE BLUE CRAB *CALLINECTES SAPIDUS*

Leonardo Airton Ressel Simões; Rafaella Sanfelice Normann; Bruna Selau, Daniela Drosdowski; Marjoriane de Amaral; Alex Sander da Rosa Araujo; Anapaula Sommer Vinagre.

Universidade Federal do Rio Grande do Sul - Porto Alegre – Rio Grande do Sul.

INTRODUCTION: Tributyltin (TBT) has been widely used as a biocide in antifouling paints applied to boat hulls. Although its use has been banned due to its impacts on non-target organisms, its residues are still detected in aquatic environments. Currently, TBT is recognized as one of the most toxic anthropogenic pollutants ever introduced into the environment. Its toxicity affects several organisms, including the blue crab *Callinectes sapidus*. In crustaceans, posterior gills are the main site of osmoregulation. OBJECTIVE: Investigate the effects of TBT on oxidative homeostasis in the posterior gills of *C. sapidus*. MATERIALS AND METHODS: The crabs were collected in Tramandaí/RS, transported to the laboratory and kept for acclimation for seven days. For the experiment, they were divided into three groups: control, 100 $ng.L^{-1}$ and 1000 $ng.L^{-1}$ of TBT. After seven days of exposure, the animals were cryoanesthetized and their posterior gills were collected for oxidative parameter analysis. The data were analyzed by Kruskal-Wallis followed by Dunn for nonparametric variables and ANOVA followed by Tukey for parametric variables, considering significance of $p<0.05$. RESULTS: Total protein concentration was significantly lower in both groups exposed to TBT compared to the control group (100 $ng.L^{-1}$: p= 0.033; 1000 $ng.L^{-1}$: p= 0.004). Total ROS levels increased in the 1000 $ng.L^{-1}$ TBT group when compared to the 100 $ng.L^{-1}$ group (p= 0.026). In both groups exposed to TBT, sulfhydryl content decreased (100 $ng.L^{-1}$: p=0.0007; 1000 $ng.L^{-1}$: p=0.0047) compared to the control group. TBARS levels were higher in the 1000 $ng.L^{-1}$ TBT group compared to the control (p= 0.032). Total GSH levels decreased in both groups exposed to TBT when compared to the control (100 $ng.L^{-1}$: p=0.0016; 1000 $ng.L^{-1}$: p=0.0043). GST activity increased (p=0.0071) in crabs exposed to 100 $ng.L^{-1}$ TBT when compared to the control group. CONCLUSION: The data indicate an impact of TBT on oxidative homeostasis, which may compromise posterior gills function. Further studies are needed to better understand the effects of this contaminant on blue crabs.

Keywords: Organotin; Oxidative stress; Crustaceans; Glutathione; Biomarkers.

Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)

Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS).