

RESPONSES OF Na^+/K^+ -ATPASE, H^+ -ATPASE AND CARBONIC ANHYDRASE IN THE GILLS OF FAT SNOOK (*CENTROPOMUS PARALLELUS*) EXPOSED TO SETTLEABLE ATMOSPHERIC PARTICULATE MATTER

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INTRODUCTION: Atmospheric particulate matter (APM) from the activities of the iron and steel processing industries can result in particle sedimentation and contamination in marine and coastal environments (settleable atmospheric particulate matter, SePM). This material contains metals and metalloids that in the aquatic environment come into contact with the gills of the fat snook (*Centropomus parallelus*) during respiration, causing changes in the activity of enzymes Na^+/K^+ -ATPase, H^+ -ATPase and carbonic anhydrase, enzymes that act in the ionic transport to maintain body water and ion concentration and control blood pH regulating cell volume and osmotic pressure thus resulting in a decrease in the balance in the animal's ionic regulation processes, since this contaminant may be available at different salinities, thus impairing the animal's greater ability to maintain the ionic concentration of body fluids, thus SePM could alter the homeostasis of the *C. parallelus*). **OBJECTIVE:** To evaluate the changes in the osmo-ionoregulation in *C. parallelus* due to the mixture of metals/metalloids present in SePM at different water salinities. **MATERIAL AND METHODS:** *C. parallelus* (n = 6) were exposed to 1g/L SePM, for 96h, under the following salinities: 0; 15 and 30 ppt. Thereafter, the gills were removed for analysis of the activity of enzymes Na^+/K^+ -ATPase, H^+ -ATPase and carbonic anhydrase (Ethics Committee Protocol: UFSCar : 8368070622/ CEUA/ UFPR: 12/2022). **RESULTS AND CONCLUSION:** The exposure of *C. parallelus* to SePM during the 96h at different salinities demonstrated significant changes in the activity of carbonic anhydrase in the control under 15 ppt salinity in relation to 0 and 30 ppt. In the animals exposed to the contaminant SePM, significant difference was observed between 0 and 15 ppt and between control and SePM exposure in the salinity of 30 ppt salinity the control and salinity of 30 ppt. No significant differences were found between the treatments and salinity in the activity of Na^+/K^+ -ATPase and H^+ -ATPase. In conclusion, the mixture of metals/metalloids in the SePM influence on the process of ionic regulation of *C. parallelus*. Financial support: FAPESP Grant 2019/08491-0.

Keywords: particulate matter; metals; fat snook; osmo-ionic balance.