

NOTE

Effects of mercury on antioxidant mechanisms in the marine phanerogam *Posidonia oceanica***L. Ferrat¹, M. Roméo^{2,*}, M. Gnassia-Barelli², C. Pergent-Martini¹**¹EqEL, University of Corsica, BP 52, 20250 Corte, France²Réponse des Organismes aux Stress Environnementaux (ROSE), University of Nice Sophia Antipolis, UMR INRA UNSA 1112, Parc Valrose, BP 71, 06108 Nice, France

ABSTRACT: Biochemical markers of oxidative stress such as catalase activity, glutathione S-transferase (GST) activity and levels of lipid peroxidation evaluated in terms of thiobarbituric acid reactive substances (TBARS) were measured in the sheaths of the marine phanerogam *Posidonia oceanica* (L.) Delile experimentally exposed to 0.01, 0.1 and 1 $\mu\text{gHg l}^{-1}$ for 48 h. Up to a threshold concentration of 0.1 $\mu\text{gHg l}^{-1}$, an increase in catalase and GST activities and TBARS levels was observed, indicating that the antioxidant mechanisms were overloaded and could not prevent membrane lipid peroxidation. Paradoxically, at 1 $\mu\text{gHg l}^{-1}$, the damage seemed to decrease, as the lipid peroxidation levels of exposed sheaths were lower than those of controls and as catalase and GST activities were not different from those of controls. A possible rapid induction of phytochelatin detoxifying mercury could occur at this high level of mercury.

KEY WORDS: *Posidonia oceanica* · Mercury · Glutathione S-transferase · Catalase · Lipid peroxidation · Oxidative stress

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