Effects of UV-A radiation on some antioxidant biomarkers in the freshwater zooplankter Simocephalus vetulus (Schoedler, 1858) (Crustacean, Cladocera)


Abstract:

This study aimed to evaluate the effects of UV-A radiation on the antioxidant biomarkers in freshwater cladoceran, Simocephalus vetulus. The collected cladocerans were adapted for the lab conditions and feed daily with yeast and algae. Specimens of the investigated species were classified into four experimental groups (200 animals per each). The first group was the control (unirradiated group) and the other three groups were treated (irradiated by UV-A). The three treated groups were subjected to irradiation for a period of 15, 30, and 60 minutes; respectively. After 3 days of irradiation, the activity of antioxidant enzymes (catalase CAT and superoxide dismutase SOD), total protein, lipid peroxidation marker, glutathione and nitric oxide were determined for each experimental group. Results showed significant differences in these antioxidant biomarkers between the control and treated groups. Also results showed the decrease in the antioxidant biomarkers such as LPO, SOD activity, NO, and GSH contents after 30 min of exposure.

Keywords:

Zooplankton-Cladocera-UVA-antioxidant-biomarkers

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