

[P-23]

Oxidative Stress Evaluation From Environmental Pollutants: Comparative study

Sun-Young Park, Se-Bum Lee, Si-Won Lee, Mi-Hee Ha, Jin-Hee Choi
Faculty of Environmental Engineering, College of Urban Science, University of Seoul
130-743, Korea

Many environmental pollutants induce oxidative stress either directly or after bioactivation process (phase I reactions) and oxidative stress related endpoints are considered as pertinent biomarkers of such stress. This study focuses on comparative aspect of oxidant-induced environmental toxicity with emphasis on identification of common biomarker for eco- and human toxicity evaluation. Four different model systems were studied: water flea (*Daphnia magna*), larva of aquatic insect (*Chironomus riparius*), soil nematode (*Caenorhabditis elegans*) and human cell line (HELa). DNA damage, lipid peroxidation and antioxidant enzyme activities were assessed and their responses were compared across different model systems. The results raise the prospect that wildlife species, such as, *D.magna*, *C.riaprius* or *C.elegans*, may serve as non-mamalian model species for monitoring the oxidative stress component of environmental toxicity.

Keyword: *Daphnia magna*, *Chironomus riparius*, *Caenorhabditis elegans*, comparative toxicity, oxidative stress, biomarker, environmental monitoring