

Effects of Benzo(k)Fluoranthene, a Polycyclic Aromatic Hydrocarbon, on DNA Damage and Oxidative Stress in Marine Gastropod *Morula Granulata*

Authors : Jacky Bhagat, Baban S Ingole

Abstract : In this study, in vivo experiments were carried out to investigate the effects of a toxic polycyclic aromatic hydrocarbon (PAH), benzo(k)fluoranthene (B[k]F), on marine gastropod, *Morula granulata* collected from Goa, west coast of India. Snails were exposed to different concentrations of B(k)F (1, 10, 25 and 50 µg/L) for 96 h. The genotoxic effects were evaluated by measuring DNA strand breaks using alkaline comet assay and oxidative stress were measured with the help of battery of biomarkers such as superoxide dismutase (SOD) catalase (CAT), glutathione-s-transferase (GST), and lipid peroxidation (LPO). Concentration-dependent increase in percentage tail DNA (TDNA) was observed in snails exposed to B(k)F. Exposure concentrations above 1 µg/L of B(k)F, showed significant increase in SOD activity and LPO value in snails. After 96 h, SOD activity were found to be doubled for 50 µg/L of B(k)F with reference to control. Significant increase in CAT and GST activity was observed at all exposure conditions at the end of the exposure time. Our study showed that B(k)F induces oxidative stress in snails which further lead to genotoxic damage.

Keywords : benzo(k)fluoranthene, comet assay, gastropod, oxidative stress

Conference Title : ICT 2016 : International Conference on Toxicology

Conference Location : London, United Kingdom

Conference Dates : February 25-26, 2016