

Protective Effect of Cow Urine against Chlorpyrifos Induced-Genotoxicity and Neurotoxicity in Albino Rats

Authors : Shelly Sharma, Pooja Chadha

Abstract : Humans are exposed to pesticides and insecticides either directly or indirectly. Exposure to these pesticides may lead to acute toxicity to mammals and non-target organisms. Chlorpyrifos (CPF) is a broad spectrum organophosphate pesticide widely used in various countries of the world. The aim of the present study was to assess the toxicity associated with chlorpyrifos exposure and possible mitigating effect of cow urine against genotoxic and toxic effects in rat brain induced by chlorpyrifos. For this purpose LD50 was determined and rats were orally administered with 1/8th of LD50 (19mg/kg b.wt). Brain samples were taken after 24hrs, 48hrs and 72hrs of treatment. A significant increase in the % tail DNA was observed along with the increase in MDA levels of brain tissues in chlorpyrifos treated groups as compared to control. Cow urine treated groups show decrease in DNA damage and MDA levels as compared to CPF treated group. The study indicates that cow urine has ameliorative potential against neurotoxicity and genotoxicity induced by CPF. Cow urine is considered rich in vitamin A, E and volatile fatty acids which provide antioxidant potential to it. Thus, it can be used as a genoprotective agent.

Keywords : comet assay, brain, cow urine, genotoxicity, toxicity

Conference Title : ICT 2016 : International Conference on Toxicology

Conference Location : London, United Kingdom

Conference Dates : February 25-26, 2016