B Padma Priya et al., J Bacteriol Parasitol 2014, 5:4
http://dx.doi.org/10.4172/2155-9597.S1.007

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Congress on
Bacteriology & Infectious Diseases
November 17-19, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

Assessment of genotoxicity of imidacloprid to freshwater teleost *Channa punctatus* (Bloch) using micronucleus assay and comet assay

B Padma Priya, Y.AVASN Maruthi and D.Apta Chaitanya
GITAM University, India

Imidacloprid (1-6-chloro-3-pyridemethyl)-N-nitro-imidazolidinimine) is a extensively used systemic, chloronicotinoide insecticide throughout the world it is effective by disrupting the nervous system of an insect pest. Restricted efforts have been made to assess the genotoxic effects of Imidacloprid in different tissues of freshwater fish. The MN assay is preferable technique to evaluate clastogenic and aneugenic effect of toxicants. Comet assay is a wide spread method to identify the DNA damage in even at small fractions. The present study was aimed to study the possible DNA damage by Imidacloprid in *Channa punctatus* by using Micronucleus assay (MN) and comet assay (alkaline single-cell gel electrophoresis) after 96 h of acute toxicity. The fish were exposed to in a static method in different concentrations of (0.002, 0.004, 0.006, 0.008 and 0.010 ppm) Imidacloprid for 96 h and samplings were done at regular intervals for MN frequencies and DNA damage. Control group also maintained simultaneously. The LC50 values for 24,48,72 and 96 h of *Channa punctatus* are 0.085,0.077, 0.073 and 0.068 ppm. A noticeable rise in frequency of micronucleus in the peripheral blood cells was found to be significantly higher ($P<0.005$) in the exposed fish at all sampling intervals when compared to the control. The frequency of MN was reached maximum at 96 h in higher concentrations of Imidacloprid. In the same way, gill tissue DNA damage was also observed and it was calculated in terms of fraction of tail DNA in the gill tissue cells. The results of DNA damage and MN frequency were statistically significant and were totally dependent on dose and time period. This assessment was discovered the mutual use of MN and comet assay for *in vivo* laboratory studies using freshwater fish for showing genotoxic effect of xenobiotics.

padmapriyabu@ymail.com