OMICS Group Conferences
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International Conference and Exhibition on
Pharmacovigilance & Clinical Trials

October 1-3, 2012 DoubleTree by Hilton Chicago-North Shore, USA

Polygonum bistorta and its active principle against hepatotoxicity

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Aim of the study: Polygonum bistorta plant locally known as a bistort, used in the Siddha system of medicine. The goal of the present work is to evaluate and compare the efficacy of root extract of Polygonum bistorta and tannic acid against CCl4-induced damage in liver and kidney.

Materials and methods: The hepatotoxicity produced by the administration of CCl4 at the dose of (1.5 and 0.15 ml kg-1 b.wt.) for once only (Acute exposure) and 21 days (Sub chronic exposure), was found to be inhibited by simultaneous oral administration of aqueous extract of P. bistorta (100 mg kg-1 b.wt.) and its active principle as tannic acid (25 mg kg-1 b.wt.) after 24 h of CCl4 administration. The enzymatic activities of AST, ALT and SALP in serum where as LPO and GSH contents in liver and kidney were estimated and histopathology of liver and kidney was performed after acute and sub chronic exposure of CCl4 and treatment and compared to the control.

Results: Severe alterations were noticed after CCl4 administration with evidence of increased level of serum AST, ALT and SALP. The significant changes were noticed in LPO and GSH contents with the concurrent administration of plant extract and its active principle after CCl4 administration. The hitopathological changes were reversed after the treatment of plant extract and its active principle.

Conclusion: This plant possesses a broad spectrum of antibiotic, antibacterial and anticancer activity. The observations of this study indicated that aqueous extract of P. bistorta roots and tannic acid could afford a better protection against CCl4- induced sub chronic hepatotoxicity in rats.

Keywords: Polygonum bistorta, Tannic acid, carbon tetrachloride, Lipid peroxidation, Reduced glutathione

Biography

Deepak Kumar Mittal from India has done PhD in Zoology in 2010 from Jiwaji University, Gwalior, India and his work is based on toxicology and pharmacology studied the toxicological effects of CCl4 and Paracetamol (APAP) in male albino rats. These toxicants are harmful effects on human and animal. It exerts a variety of toxic effects in the body. Here his research interests also involved assessment of the some herbal plant and its active principles with antioxidants against CCl4 and APAP induced toxicity in male rats. Now, He is keenly interested in developing his career, knowledge and skill in the advanced and upcoming research areas of toxicology and pharmacology. Herbal Medicines are plant based formulations that are used to alleviate the diseases. These are also known as botanical medicines or phytomedicines. Lately, phytotherapy has been introduced as more accurate synonym of herbal or botanical medicine. Recently treatment of diseases with herbal medicine has been addressed as phytopharmacotherapy and herbal medicinal products have been included in dietary supplements.

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