

Safety and toxicity evaluations of *Xanthium strumarium* Linn

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Xanthium strumarium L. is poisonous to mammals due to its toxic principle which is a diterpenoid glycoside i.e. atractyloside found in the roots and seeds. It was thought worthwhile to carry out the hepatotoxic assessments and safety and toxicity evaluations of oral administration of atractyloside and methanolic extracts of *X. strumarium* L. in Albino Wistar rats. So, present investigation was undertaken with following objectives: To develop standardized protocols for Extraction, isolation, purification, characterization and quantitative estimation of Atractyloside; Hepatotoxic assessments of oral administration of atractyloside in Albino Wistar rats and; To study the safety and toxicity evaluation of methanolic extract in Albino Wistar rats. *Xanthium strumarium* Linn. root and seeds were found to contain alkaloids, anthraquinones, flavonoids, atractyloside, phenolics, steroids, terpenoids, and resin etc. In the present investigation, attempt was made to separate the atractyloside by using instant preparative thin layer chromatography (IPTLC) technique. Purified atractyloside was chemically characterized by IR, Mass and NMR spectral analysis. Atractyloside concentrations were found to be 2.9 and 4.3 mg/

ml in plant root and seeds respectively using HPLC techniques. During hepatotoxic assessment, atractyloside produced severe hepatotoxicity in Albino Wistar rats. Observations of the sub-acute and acute toxicity studies had indicated that methanolic extract of *X. strumarium* had shown a narrow safety margin in animals. On the basis of sub-acute and acute toxicity evaluation studies, it was established that both atractyloside and methanolic extract of *X. strumarium* L. possess a narrow safety margin in rats used in in-vivo experimental and preclinical pharmacological studies.

Speaker Biography

Bhanu P S Sagar had completed his PhD from Jamia Hamdard, Post-doc from National Institute of Immunology and DSc in Alternative Medicine. He is presently the Director of Pharmacy College at IEC-GI & Former Vice-Chancellor of IEC University and has published 47 papers and presented 30 papers. He has presented two papers in "AAPS 2006 National Biotechnology Conference" in Boston, USA. He is evaluator for various international journals and also selected for "Marquis Who's Who in Asia" and "Marquis Who's Who in World". He has received many awards and prime areas of research include Plant Tissue Culture, Phytochemical & Pharmacological investigations of natural products.

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