

The influence of *Butea monosperma* on doxorubicin-induced nephrotic syndrome in rats

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The objective of study was to evaluate the effect of n-butanol fraction (NBF) and ethyl acetate fraction (EAF) of flowers of *Butea monosperma* (BM) against doxorubicin (DOX) induced nephrotic syndrome (NS). A single injection of DOX (7 mg/kg, i.v) induced severe nephrotic syndrome after 4 weeks of its administration and was associated with hypoalbuminemia, hypoproteinemia, elevated serum urea (BUN), creatinine, hyperlipidemia, and a high urinary excretion of protein. Female Sprague-Dawley rats were divided into 7 groups (n = 6). Group I was treated with vehicle. Group II to VII were injected with a single dose of DOX (7 mg/kg, i.v.) to induce nephrotic syndrome. After administration of DOX, group I and II were treated with (vehicle, p.o.), Group III was treated with prednisolone (3 mg/kg, p.o.), while the test groups IV, V were administered NBF (100 and 200 mg/kg, p.o.) and test groups VI and VII were administered EAF (100 and 200 mg/kg, p.o.) respectively, daily for 28 days. NBF (200 mg/kg, p.o.) reduced increase in urine protein excretion, plasma total cholesterol and triglycerides, BUN, creatinine. NBF was found to be more potent than EAF. The results confirmed the involvement of free radicals in the pathogenesis of nephropathy induced by DOX. The data suggest the potential of extract of *Butea monosperma* as a protective agent for nephrotic syndrome as alternative or as an adjunct to conventional therapy. The antinephritic potential of *Butea monosperma* could be attributed to its flavonoid and steroid content.

Biography

Nitish Chaudhari is currently pursuing masters in pharmacy (Pharmacology) at Bombay College of Pharmacy, University of Mumbai, under the guidance of Dr. M. N. Saraf, Principal and Professor of Pharmacology.

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Development of single and multi-metal adapted arsenate [As⁵⁺] grown acidithiobacillus ferrooxidans – HGM 38 towards biooxidation of arsenopyrite ore- A method for gold extraction

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Acidithiobacillus ferrooxidans by their chemolithotrophic behaviour is widely implicated in bioleaching of metals from sulfidic ores. This process of metal extraction, an eco-friendly process and widely practiced in western countries, are more economically beneficial to lean ores, [metal conc in ppm-mgs] with normal metallurgical process not feasible. Arsenopyrite, an arsenic ore, is a lean ore of gold, with gold encapsulated within arsenic matrix. The current work aims in bioleaching of arsenopyritic ore with arsenic [As³⁺/As⁵⁺] multi-metal resistant thiobacilli strain. Multi-metal resistant strains effectively combat toxicity of solubilized metals beyond certain concentration, with enhanced bioleaching efficiency.

MC [Wild culture] and HGM-38 effectively grew on Fe²⁺ ions, in 72 hrs [% of Fe [II] oxidized = 97.0%] at 2.5 pH, 37°C, 180 rpm. On initial exposure to arsenate [20, 40 & 80mM] HGM 38 showed better growth in 72, 72 & 144 h respectively, while MC failed to grow even on prolonged incubation. By definite transfer pattern, 40mM adapted HGM 38 strain was developed [t= 48 h], while in 80 mM, iron utilization time remained constant [t=144 h], with better adaptation expected on further transfers. 40mM grown HGM-38 as inoculum, in nickel supplemented medium [20, 60, 80 & 250 mM Ni²⁺] showed growth pattern in 48 – 96 hrs, while MC failed to grow at 250 mM. Thus arsenate adaptation increased the level of tolerance to Nickel. Further studies with other metals in single/combination, are in progress and discussed there on.

Biography

P. G. Greeshma is pursuing her Master's, currently working under the guidance of Dr. C. D. Venkatakrishnan for her M.Sc dissertation. Her undergraduation was from PSG College of Arts & Science., Coimbatore, and currently in SASTRA University., Thanjavur for her Master's program. Her mentor obtained his doctoral degree from Indian Institute of Technology, Madras, with post-doctoral experience in United States of America.

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