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The modulatory effect of methanol extract of *Piper guineense* in CCl₄-induced hepatotoxicity in male rats

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The aim of this study was focused on investigating the possible protective effect of *Piper guineense* against CCl₄-induced hepatotoxicity in animal-model. Thirty male Wistar-albino rats were divided into five groups as follows: control, CCl₄, pre-treatment, post-treatment and standard drug. Hepatotoxicity was induced by administering oral dose of CCl₄ (1.2 g/kg bw) 3 times a week for 3 weeks. In the modulatory experiment, *Piper guineense* (PG), (400 mg/kg bw) was administered by oral gavage for 14 days prior to the administration of CCl₄ and simultaneously with CCl₄ in the pre-treatment group; PG (400 mg/kg bw) was administered simultaneously with CCl₄ in the post-treatment group while Livolin forte (20 mg/kg bw) was administered simultaneously with CCl₄ in the standard drug group. Administration of CCl₄ induces histo-pathological alteration in the liver with concomitant increased activities of serum hepatic marker enzymes associated with increased level of lipid peroxidation. Similarly, there was decrease in non-enzymatic (reduced Glutathione; GSH) and enzymatic antioxidants (Glutathione S-Transferase; GST), Superoxide Dismutase (SOD) and Catalase (CAT). Elevation in serum Triglyceride (TG) and Total Cholesterol (TC) levels was noticed along with decreased level of serum Total Protein (TP). Treatment with PG 400 mg/kg bw exhibited excellent modulatory activity with respect to the different parameters studied by reversing all the above-mentioned biochemical changes significantly in all experimental animals. These results suggest that PG offered protection comparable to that of Livolin forte with better efficacy when pre-treated with 400 mg/kg bw 14 days prior to CCl₄-exposure.

Biography

Babatunji Emmanuel Oyinloye is a Lecturer in the Department of Biochemistry, Afe Babalola University, Ado-Ekiti, Nigeria. He has published numerous papers in reputed journals and has been serving as a Review Member of reputed journals. He is currently rounding up his Doctoral degree in Biochemistry in the University of Zululand, South Africa. He has professional membership of Nigerian Society of Biochemistry and Molecular Biology, South African Society of Biochemistry and Molecular Biology and Society of Biology, London. Over the years, his research has centred on the evaluation and assessment of medicinal plant used in the traditional treatment of metabolic diseases, with special interest in rational drug discovery and development of nutraceuticals.

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