

**ACHATINA FULICA EXOSKELETON DERIVED CHITOSAN ATTENUATES
LIVER AND KIDNEY TOXICITIES IN DEXAMETHASONE INDUCED
HYPERTENSIVE MALE WISTAR ALBINO RATS**

Oseni, O. A.,^{1*} Kayode, D. M.² & Sijuade, A. O.³

¹Department of Medical Biochemistry, College of Medicine, Ekiti State University, Ado-Ekiti, **NIGERIA**

²Department of Science Laboratory Technology, Ekiti State University, Ado-Ekiti, **NIGERIA**

³Department of Pharmacology, College of Medicine, Ekiti State University, Ado-Ekiti, **NIGERIA**

ABSTRACT

Chitosan, a natural mucopolysaccharide obtained from chitin of animal exoskeletons have been suggested to play vital medical roles. Its effects have been investigated in patients with chronic renal failure undergoing long term stable haemodialysis treatment. However antioxidative and antihepatotoxic effects might not have been reported, hence this study was investigated to monitor the anti-oxidative and anti-toxicity effects of small snails (*Achatina fulica*) exoskeleton derived chitosan in the liver, kidney and plasma of dexamethasone induced hypertensive rats. The animals were acclimatized for two weeks before administration of the drug. The animals were divided into four groups of five rats each with various treatments and administrations which lasted for three weeks. After which the animals were anesthetized, dissected and [catalase, superoxide dismutase (SOD), alkaline phosphatase (ALP), aspartate transaminase (AST) and alkaline transaminase (ALT)] activities; reduced glutathione, cholesterol and malondialdehyde (MDA) status were evaluated the plasma, kidney and liver homogenates. The results obtained showed that dexamethasone actually induced significant stress in both organs of the hypertensive rats with elevation of some enzyme activities which is indicative of organ toxicity; cholesterol and MDA a marker of lipid peroxidation with reduced GSH and catalase while chitosan manifested its liver and kidney anti-toxicity and anti-oxidative potentials by assuaging the enzyme activities and metabolites in plasma and the organs.

Keywords: Organ toxicity, oxidative stress, hypertension, dexamethasone, chitosan, antioxidant.