

## Biochemical and histopathological profile of toxicity induced by saponin fraction of *Erythrophleum suaveolens* (Guill. & Perri.) bark extract

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### Abstract

In this study the toxic effect of saponin fractions from the stem-bark of the *Erythrophleum suaveolens* on some biochemical parameters in white albino rats, haemolytic effect and membrane stabilizing activities exposed to both heat and hypotonic-induced lysis using bovine red blood cells were investigated. The result revealed that saponin fractions (90:10,80:20 and 70:30) haemolysed red blood cells in varying degrees and stabilizes bovine erythrocytes at low concentration except for= 70:30 fractions which protected at all concentration used. The combined saponin fractions (90:10+80:20 + 70:30) caused hepatic damage, renal impairment and metabolic derangement in the treated rats followed by significant elevation of plasma and liver aspartate and alanine aminotransferases, total bilirubin, total protein, plasma creatinine, urea, total sugar and significant reduction in plasma and liver alkaline phosphatase, gamma glutamyl transferase, muscle creatinine and liver glycogen. Moreover, the saponin mixture caused progressive degeneration of the liver, intestine and kidney of treated animals as revealed by histopathological examination of the organs. Thus *E.suaveolens* stem bark saponins exhibits toxic and haemolytic activities.

**Keywords:** *Erythrophleum suaveolens*; Haemolytic activity; Membrane stabilizing activity

### Introduction

*Erythrophleum suaveolens* is a perennial tree of about 30m in height, often low-branching and producing a dense spreading crown. It is referred to by various names by natives, these include *obo* and *erun* (Yoruba), *inyi* (Igbo), *baska* (Hausa), *aba* (Akan-Asante, Ghana), *digpende* (Bassari-ogo), *тели* (Koranko-Sierra leone) etc. It is often referred to in English as sassy, sasswood, red water tree and ordeal tree (Burkill, 1985). Studies have shown that the plant *Erythrophleum* species are extremely toxic to livestock especially, sheep and