

Acute and sub-acute toxicity studies of aqueous stem bark extracts of *Peltoforum africanum* and *Adansonia digitata* using mice models

Tafadzwa Taderera

University of Zimbabwe, P.O.Box MP 167, Mt Pleasant, Harare, Zimbabwe

Up to 33.7% of the population are affected by an anxiety disorder during their lifetime. Because of higher prevalence of mental disorders in Zimbabwe, traditional medicines are becoming a popular alternative for the management. Despite the extensive use of these plants, scientific evidence on toxicity studies are lacking. This study was therefore aimed at determining the plants toxicity's before bioactivity testing of their claimed use in management of anxiety.

In the acute toxicity testing, groups of five mice each were administered with doses of 50, 100, 200, 400, 800, 1000 and 2000mg/kg of the plants. Administration was done to overnight fasted mice by oral gavage through a single oral dose to estimate lethal doses. In the 28-day subacute oral toxicity test, the mice received doses of 100, 200 and 400 mg/kg. Biochemical analysis on selected parameters and histopathological examinations were done on the mice that went through the 28-day test.

The LD₅₀ for the acute toxicity test of *P. africanum* extract was estimated to be between 800 and 1000 mg/kg body weight. Mortalities, behavioural and posture changes were observed with higher doses. No animal mortalities occurred when *A. digitata* extract was administered. On subacute toxicity testing, there were significant ($P<0.05$) lower growth rates in all the experimental groups administered with *P. africanum* when compared to the control. The serum biochemical results generally did show increases which were however not statistically significant for all the groups when compared to the control for both plant extracts. Gross pathology and histopathology examination of the liver and kidney tissues only showed slight differences between control and the *P. africanum* treated samples.

It is concluded from the study that the aqueous extracts of *P. africanum* are potentially toxic at higher doses and should be used with caution whilst those of *A. digitata* are potentially safe.

Biography

Tafadzwa completed her PhD in 2016 from the University of Zimbabwe, College of Health Sciences. She is in her second year of Post Doctoral studies under the PERFECT programme. Tafadzwa is a senior lecturer in the Department of Physiology and is the chairperson of department. She has published more than 20 papers in peer reviewed journals and recently had one of her publications selected to be published as book chapter (Emerging Research in Medical Sciences). Tafadzwa's research interests revolve around the use of traditional medicines in the management of different ailments, in the hope to develop new drugs.