Extended Abstract

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Oral LD50 of total saponins and tannins isolated from Dialium guineense stem bark

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Abstract

The safety of bioactive compounds isolated from plant extracts has become a global concern. The aim of this study was to determine the oral LD50 of total saponins and tannins isolated from *Dialium guineense* stem bark using Sprague Dawley rats. Male Sprague Dawley rats (n=13) weighing 150-180 g (mean weight=165 ± 15 g) were used for this study. The aqueous, ethanol and methanol extracts of the plant stem bark were obtained using cold maceration method. The lorke method was used to determine oral LD50 of isolated total saponins and tannins of *D. guineense*. Signs of toxicity and possible death of rats were also monitored for twenty-four (24) h.

Keywords

Dialium guineense; Acute toxicity; Rats, Extract; Lethal dose

Introduction

In recent times, plant-derived substances have become of huge importance to man due to their many applications. Extraction methods involve the separation of medicinally active portions of plant tissues from the inactive/inert components using selective solvents. Evidence-based research supports the medical and pharmacological benefits of plant-derived compounds with interest in the identification and characterization of bioactive compounds from natural sources [2]. Dialium guineense grows in dense forests in Africa along the southern edge of the Sahel and it can be found in West African countries such as Ghana where it is known as “Yoyi”, Sierra Leone, Senegal, Guinea-Bissau and Nigeria where it is known as “Awin” or "Igbaru" in Yoruba, “Icheku” in Igbo, “Tsamiyarkurm”in Hausa and“Amughen” in Edo. The bark and leaves have medicinal properties and are used against several diseases [3]. Despite the widespread use of D. guineense in medical research, the security of its bioactive components is never reported. Saponins are a class of chemical compounds found in abundance in various plants species. They are amphipathic glycosides grouped phenomenologically by the soap-like foam they produce in aqueous solutions when shaken, and structurally by having one or more hydrophilic glycoside moieties combined with a lipophilic triterpene or steroid derivative [4]. Tannins are phenolic compounds of high molecular weight, which are soluble in water and alcohol, and are found in the root, bark, stem and outer layers of plant tissue. Their acidic nature in reactions is attributed to the presence of phenolic or carboxylic acid group [5]. The aim of this study was to work out oral LD50 of total saponins and tannins isolated from D. guineense stem bark using Sprague Dawley rats.

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Discussion and Conclusion

There have been developing interests in the harmfulness of substances decontaminated from plants essentially to decide their security. The point of this examination was to decide the oral LD50 of absolute saponins and tannins confined from D. guineense stem bark utilizing Sprague Dawley rodents. The outcomes demonstrated that no passing was recorded in the two stages after 24 h and all the rodents in each gathering endure. The significant indications of harmfulness saw inside 24 h were: trouble in breathing, loss of craving and general shortcoming. Therefore, the middle deadly portion LD50 (oral) of absolute saponins and tannins of D. guineense stem bark were more noteworthy than 5000 mg/kg bwt. These outcomes propose that the all out saponins and tannins might be moderately protected [8]. One significant and abrogating standard in the choice of home grown medication for use in wellbeing administrations is security. Phytochemicals present in plant concentrates ought not exclusively be clinically powerful, however alright for utilization.

Along these lines, screening of bioactive segments present in plant concentrates to distinguish their poisonous possibilities is the requirement for determination of plants for tranquilize definitions.

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