

News & Comments

The Total Aqueous Extract of the Root Bark of *Solanum rugosum* is Not Toxic and is Well Tolerated

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The Solanaceae family is frequently utilized in ethnobotany and for food and medicine. Many species produce stimulants, poisons, narcotics, and analgesics due to the presence of alkaloids. For instance, atropine poisoning can result in loss of consciousness, delirium, headache, visual abnormalities, and accelerated heart rate. Solanaceae play a significant role in both conventional and contemporary ophthalmology. The Romans utilized the juice of the belladonna berries (*Atropa belladonna*) to enlarge their pupils and give them a more appealing appearance. In Malawi, conjunctivitis is treated by rubbing scarifications around the eyes with juice from the fruit of the same plant. Atropine acts as an analgesic by relaxing the intrinsic oculomotor muscles, making it beneficial to investigate specific cases of hypermetropia that are partially compensated by compensatory attempts.

The major goal was to identify the alkaloids that were present in the decocted and to assess the acute toxicity as well as the cutaneous and ocular tolerances of the plant that was being used by the general public to cure eye disorders.

Solanum rugosum root's bark is employed. Male New Zealand rabbits and female Swiss-type albino white mice were used in the tests. These creatures are from the UFR SPB facility for animals. Mechanical grinder type GM 300, heating flask, precision balance type Si-602, freeze-dryer type Alpha 12 (Christ), and refrigerator are the tools employed for the extraction in this investigation (Liebherr Premium, France). Student's t-test for single comparisons, univariate ANOVA, followed by Tukey's test for multiple comparisons, and calculation of significant rates are used to assess the data of the toxicological investigation.

With the use of Dragendorff's and Bouchardat's reagents, the aqueous extract of *Solanum rugosum* root bark was characterized. The acquired results showed that the plant's extract had a significant alkaloid content. We were led to the structure of corynantheine by the various fragmentations. Alkaloids were found in the whole aqueous extract of *Solanum rugosum* root bark after characterization tests were conducted on it. The genus *Solanum* had these secondary metabolites. The existence and interaction of these many alkaloids may enable the plant to engage in some intriguing biological processes. There is no erythema, edema, or eye injury 72 hrs after the complete aqueous



extract of the root bark of *Solanum rugosum* was applied to the skin and the eye.

The absence of toxicity and the good cutaneous and ocular tolerances of the whole aqueous extract of the bark of the root of *Solanum rugosum* are thus reflected (conjunctivitis, swelling of the eyelids, injury to the cornea and iris). The calculated LD50 is larger than 2000 mg kg⁻¹ b.wt after evaluating the acute toxicity and the skin and ocular tolerance of the whole aqueous extract of the root bark of *Solanum rugosum*. This extract is well tolerated by the skin and eyes and falls under category 5 of non-toxic chemicals.

JOURNAL REFERENCE

Calixte, B., T.A. N'dri Marcelline, A.O. Aminata, T. Moriba and A.A. Jean-Baptiste *et al.*, 2021. Phytochemical, acute toxicity and tolerance evaluation of *Solanum rugosum* (Solanaceae) on skin and eye. *Res. J. Med. Plants*, 15: 36-45.

KEYWORDS

Solanum rugosum, Solanaceae, LC-ESI-Q-TOF-MS, acute toxicity, skin and eye tolerances

