

Toxicity studies on dermal application of dichloromethane-methanol (1:1 v/v) stem bark extract of *Polyscias fulva* Hiern (Araliaceae), an anti-infectious medicinal plant

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Ethnopharmacological relevance: *Polyscias fulva*, a medium size tree which grows in the tropical forests of West and Central Africa, is a popular medicinal plant used to treat malaria, mental illness, venereal infections, pulmonary tuberculosis, fevers as well as dermatoses. To date there is no documented evidence corroborating its safety. Thus this work aimed to determine the dermal toxicity profile of the oil-moistened dichloromethane-methanol (1:1 v/v) stem bark extract of *Polyscias fulva*.

Materials and Methods: The single and repeated dose dermal toxicity of the methanolic extract of *Polyscias fulva* were investigated by employing established methods. The acute toxicity study was done by administering single doses (0.5, 4.25 and 8 g/kg body weight) of plant extract to both male and female adult guinea pigs. For the repeated dose dermal toxicity study, doses (13, 256.5 and 500 mg/kg bw) of plant extract were administered daily to male and female adult guinea pigs during 30 days after which the effect on organs, the hematological and biochemical parameters were assessed.

Results: The single and repeated dermal toxicity tests on guinea pigs did not show any overt sign of toxicity. The lethal dose fifty (LD₅₀) of the oil-moistened extract from the stem bark of *Polyscias fulva* is higher than 8000 mg/kg in guinea pigs. The findings of this study collectively indicate that dermal application of the oil-moistened extract from the stem bark of *Polyscias fulva* is not associated with any toxicologically relevant effects in neither male nor female guinea pigs.

Conclusions: The overall results of this study indicate that the oil-moistened dichloromethane-methanol (1:1 v/v) stem bark extract of *Polyscias fulva* could provide satisfactory preclinical evidence of safety to launch a clinical trial on a standardized formulation of the plant extracts.

Key words: *Polyscias fulva*, acute toxicity, sub-acute toxicity, dermal application.

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