

Evaluation of acute, subacute and subchronic oral toxicity of *Rhaphidophora decursiva* (Roxb.) Schott extract in male Sprague Dawley rats

ABSTRACT

Rhaphidophora decursiva (Roxb.) Schott has been used in some Chinese community to treat colon cancer. This study aims to evaluate the toxic effects of the plant extract after a single dose toxicity study (14-day acute toxicity study), as well as 28-day sub-acute and 90-day subchronic toxicity study in male Sprague Dawley rats. Seventy two rats were divided into 3 groups for the acute, sub-acute and sub-chronic toxicity evaluations. Each group also have its control group which received distilled water. For the acute toxicity study, the 3 treatment groups received a single oral dose of the plant extract at 700, 2800 or 3500 mg/kg. The rats were then sacrificed after 14 days. For the sub-acute toxicity study, the 3 treatment groups received a daily oral dose of the plant extract at 70, 140 or 210 mg/kg for 28 days. As no lethality was observed in the sub-acute toxicity study, similar doses were used for the 90-day sub-chronic toxicity study. The toxicity was evaluated by the incidence of lethality, cage-side observations, body weight measurements, hematological and serum biochemical results. No adverse effects were observed during the experimental periods in any of the studies. Behaviour, body weight, haematological and biochemical analysis also showed no significant changes in the three toxicity studies. Based on the results, we concluded that the methanol extract of *R. decursiva* did not cause any toxic effects in male Sprague Dawley rats. The lethal oral dose (LD₅₀) of the extract was greater than 3500 mg/kg, while the noobserved-adverse-effect level (NOAEL) for the extract was 210 mg/kg when administered once per day for 90 days.

Keyword: *Rhaphidophora decursiva* (Roxb.) Schott extract; Acute toxicity; Sub-acute toxicity; Sub-chronic toxicity