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Acute and subacute toxicity assessment of liquid CO₂ extract of *Phaleria macrocarpa* fruits flesh in mice model

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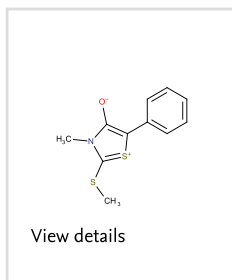
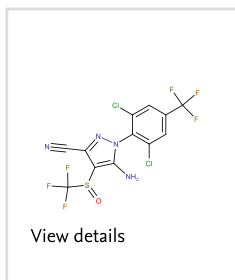
Objectives: *Phaleria macrocarpa* (Scheff.) Boerl., an evergreen tree is found in Indonesia, Malaysia and Oceania, explicitly Northern Territory of Australia and Papua New Guinea. The fruits are traditionally used to treat various ailments including diabetes, psoriasis, looseness of the bowels, skin inflammation, malignancy, kidney, liver and heart sicknesses. However, to date, no comprehensive study investigating its toxicity profile utilizing liquid CO₂ extract (LCE) has been reported in ICR mice. Hence, this research was performed to investigate the both acute and sub-acute toxicities of the liquid carbon dioxide extract from ripe fruit flesh of the *P. macrocarpa* in mice. **Methods:** Acute toxicity was assessed at a single dose of 3000 mg/kg bw for 2 weeks according to the up and down method of OECD 425 guideline, while the sub-acute test was assessed by liquid carbon dioxide extract at doses of 250, 500, 1000, and 2000 mg/kg bw for 28 days. The animals' general behaviour, food intake, body weight, organ coefficients, biochemical and histological morphology were observed and analysed. **Results:** After acute exposure to LCE, there was no evidence of any severe or fatal effects in the mice. An acute toxicity result exhibited that LD₅₀ of LCE was > 3000 mg/kg bw. The findings of subacute toxicity evaluation revealed that LCE at doses of 250 and 500 mg/kg bw had no significant detrimental impact. Moreover, LCE at 1000 and 2000 mg/kg bw demonstrated toxicity to the heart, liver, kidney and lung in mice identified by histological and biochemical investigation. **Conclusions:** The results confirmed that the LCE dosage at 500 mg/kg bw is considered a safe dose that can provide a better therapeutic effect without eliciting any adverse side effects. © 2022 The Author(s)

Author keywords

Acute toxicity ; Biochemical analysis; Histopathology; Liquid carbon dioxide extract ; *P. macrocarpa* ; Sub-acute toxicity

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