

Investigation and evaluation of acute and sub-acute dermal toxicity studies of ethanolic leaves extract of *Melastoma malabathricum* in Sprague Dawley rats

ABSTRACT

Melastoma malabathricum is an important plant commonly used in traditional medicine. Until recently, the dermal toxicity profile of *M. malabathricum* remained unknown. The objective of this study is to investigate the in vivo acute and sub-acute dermal toxicity of ethanolic leaves extract of *M. malabathricum* in rats. In acute experiment, a total of 20 female rats were divided into four groups, each group had five rats. While, a total of 30 male rats were divided into five groups, each group consisted of six rats in sub-acute experiment. Single doses of the extract at 2000 and 5000 mg/kg of body weight failed to produce treatment-related signs of toxicity or mortality during the 14-day observation period. In a repeated dose 28-day study, 500, 1000 and 2000 mg/kg of body weight/day applications of leaf extract lead to no significant change ($p > 0.05$) in bodyweight or haematological and biochemical parameters compared with the control group. Similarly, gross pathology and histopathology examinations of liver, spleen, kidneys, and skin did not reveal any morphological alteration. Results indicate that the close application of *M. malabathricum* leaves extract had no critically dangerous effect on the rats tested. Therefore, the concentrate may be used pharmaceutically.

Keyword: *Melastoma malabathricum*; Acute toxicity; Sub-acute toxicity; Histopathology