

## **Chemopreventive activity of methanol extract of *Melastoma malabathricum* leaves in DMBA-induced mouse skin carcinogenesis**

### **ABSTRACT**

**Background:** *Melastoma malabathricum* L. Smith (family Melastomaceae) is a shrub that has been used by the Malay practitioners of traditional medicine to treat various types of ailments. The present study aimed to determine the chemopreventive activity of methanol extract of *M. malabathricum* leaves (MEMM) using the standard 7,12-dimethylbenz( )anthracene (DMBA)/croton oil-induced mouse skin carcinogenesis model. **Materials and Methods:** In the initiation phase, the mice received a single dose of 100 $\mu$ l/100  $\mu$ g DMBA (group I-V) or 100 $\mu$ l acetone (group VI) topically on the dorsal shaved skin area followed by the promotion phase involving treatment with the respective test solutions (100  $\mu$ l of acetone, 10 mg/kg curcumin or MEMM (30, 100 and 300mg/kg)) for 30 min followed by the topical application of tumour promoter (100 $\mu$ l croton oil). Tumors were examined weekly and the experiment lasted for 15 weeks. **Results:** MEMM and curcumin significantly ( $p < 0.05$ ) reduced the tumour burden, tumour incidence and tumour volume, which were further supported by the histopathological findings. **Conclusion:** MEMM demonstrated chemoprevention possibly via its antioxidant and anti-inflammatory activities, and the action of flavonoids like quercitrin.

**Keyword:** Melastomaceae; Skin cancer; Anti-carcinogenic activity