Evaluation of the phytochemical content and the use of the essential oil from the leaves of Malaysian *Plectranthus amboinicus* (lour) spreng as antimalarial in vivo

Norazsida Ramli\(^a\) | Pakeer Oothuman\(^b\) | Muhammad Taher\(^c\)

\(^a\)Kulliyyah of Allied Health Sciences, International Islamic University Malaysia

\(^b\)Kulliyyah of Medicine, International Islamic University Malaysia

\(^c\)Kulliyyah of Pharmacy, International Islamic University Malaysia

**Introduction:** This study was conducted to evaluate the phytochemical contents and antimalarial properties of the essential oils extracted from the leaves of Malaysian *Plectranthus amboinicus* in mice infected with *Plasmodium berghei*.

**Methods:** The essential oils were extracted and prepared by using a steam distillation technique and subjected to phytochemical screening by using gas chromatography-mass spectrometry (GC-MS). The antimalarial activity of different extract doses of the essential oil was tested in vivo in ICR (Institute of Cancer Research) mice infected with *Plasmodium berghei* (PZZ1/100) during early, established and residual infections. The control groups were treated with distilled water (containing 10% DMSO, the solvent of the test extracts) and 2 standard drugs: chloroquine and Fansidar.

**Results:** In all, 5 compounds made up 88.34% of total oil and the major chemical compounds were carvacrol (85.14%), thymoquinone (1.65%), terpinen-4-ol (0.70%), octenol (0.62%) and thymol (0.23%). Antimalarial assay showed this essential oil as a potential prophylactic agent with the percentage chemosuppression of 45.23%, 18.28%, 45.38% and 58.26%, while treated with 50, 200, 400 and 1000 µL/kg respectively of essential oil. It also showed a potential as a curative agent with percentage of chemosuppression of 54.10%, 47.35%, 56.75% and 65.38% while treated with the above dose of essential oil. Statistically, no reduction of parasitemia was calculated for suppressive test.

**Conclusions:** The extract has prophylactic and curative effects on *P.berghei* in mice.

**KEYWORDS:** phytochemical, toxicity, *Plectranthus amboinicus*, antimalarial