

Determination of drugs resistance molecular markers of *Plasmodium falciparum* in Malaysia**Afiqah SH***Institute for Medical Research, Kuala Lumpur, Malaysia***Abstract**

Continuous monitoring of the development and spread of malaria parasite resistance towards anti-malarial drugs is fundamental in progressing towards eliminating malaria from Malaysia. However, the updated data on the distribution of drug resistance molecular markers in Peninsular Malaysia is limited, involving mostly only from East Malaysia. Thus, the aim of this study was to determine the drug resistant molecular markers and their distribution in Peninsular and East Malaysia. A total of 67 diagnostic blood samples from malaria infected individuals were received from district health centres and confirmed as *P. falciparum* by nested PCR for species specific identification. Samples were then subjected for drug resistance genes analysis for artemisinin (PfKelch-13; K13) and chloroquine (Pfcrt and Pfmdr1) using Restriction Fragment Length Polymorphism (RFLP) and validated by sequencing. Out of 67 samples, 2 (3%) samples showed a presence of K13 mutations at P553L and A675V which has been implicated to be associated with delayed parasite clearance for artemisinin. Meanwhile, 44 samples (65.7%) showed mutation for Pfcrt genes at K78T site and 28 samples (41.8%) have mutation for Pfmdr-1 at N86Y. Although artemisinin combination-based therapy is used as first line anti malaria treatment in Malaysia, continuous monitoring of the distribution of Pfcrt and Pfmdr1 mutations alongside the emergence of K13 mutations is vital in order to facilitate national policy makers in governing and managing the burden of the disease to the country.

Keywords: Drug resistance; molecular markers; *Plasmodium falciparum*; malaria

*Author for Correspondence