

ABSTRACT

Profile of *Plasmodium falciparum* Chloroquine Resistance Transporter Codon 72-76 and Multidrug Resistance Transporter 1 Codon 86 in North Barito Middle Kalimantan

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People living at remote areas are common consume anti malarial drugs by themselves especially chloroquine. To aim to identify the *Plasmodium falciparum* resistance to chloroquine, *Plasmodium falciparum* chloroquine resistance transporter in codon 72-76 and *Plasmodium falciparum* multidrug resistance transporter 1 in codon 86 were examined. A cross sectional study was conducted in Sei Rahayu 1 sub district, North Barito, Middle Kalimantan in April 2016. *Plasmodium* parasites were identified by microscopic examination and nested PCR method. The polymorphism in codon 72-76 of *PfCRT* was identified by DNA sequencing and in codon of 86 of *PfMDR1* was detected by PCR-RFLP. In total 16 of 219 samples (7,3%) were infected with *Plasmodium falciparum* by microscopic examination and 13 of 16 samples (81,25%) were positive *P. falciparum* by nested PCR method. Two types of *PfCRT*₇₂₋₇₆ haplotypes were detected from 4 *P. falciparum* isolates that were CVMNK (2/4) and CVIET (2/4) (Underline word is an amino acid substitution). All *P. falciparum* isolates showed the wild type of *PfMDR1*₈₆. Five stalls (5/6, 83.3%) sell chloroquine. It suggested that the use of chloroquine by people and the use of ACT may involve in the formation process of these *PfCRT*₇₂₋₇₆ haplotypes in *P. falciparum* isolates in Sei Rahayu I. Thus, molecular marker for anti malatial drugs resistance in *P. falciparum* and anti malarial drugs distribution should be regularly monitored in order to reduce mutant parasites and their spreading, particularly in Sei Rahayu 1, North Barito district, Middle Kalimantan.

Keywords : *PfCRT*₇₂₋₇₆, *PfMDR1*, Sei Rahayu, identification gene