

## ABSTRACT

### IDENTIFICATION OF CODON 1034 *Pfmdr1* GENE SINGLE NUCLEOTIDE POLYMORPHISM ON MALARIA PATIENTS IN WORKING AREA PRIMARY HEALTH CARE HANURA, PESAWARAN, LAMPUNG

By

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**Background:** *Plasmodium falciparum* is one of Plasmodium which can cause malaria. *Plasmodium falciparum* that is resistant to anti-malaria drugs caused by genetic mutations. The presence of a single nucleotide polymorphism in codon 1034 of the Plasmodium Falciparum Multidrug gene Resistance 1 (*Pfmdr1*) can be a genetic marker of chloroquine drug resistance to Plasmodium falciparum. Examinations carried out based on molecular biology have been widely investigated to detect gene polymorphisms through Polymerase Chain Reaction (PCR) and analyzed sequentially.

**Method:** This research used a survey research design with descriptive method. Sample obtained from 22 stored Archived Biological Materials (ABM). The examination was carried out by using the PCR method and analyzed by sequencing to detect the polymorphism of codon 1034 gene *Pfmdr1*.

**Result:** There were 22 samples that had been carried out nested PCR, then 12 samples were continued sequencing with the result of codon 1034 *Pfmdr1* gene in all samples were wild-type.

**Conclusion:** There are no Single Nucleotide Polymorphism codon 1034 Plasmodium Falciparum Multidrug Resistance 1 (*Pfmdr1*).

**Keyword:** Codon, *Plasmodium Falciparum Multidrug Resistance 1 (Pfmdr1)*, Polymerase Chain Reaction (PCR).

## ABSTRAK

### IDENTIFIKASI SINGLE NUCLEOTIDE POLYMORPHISM (SNP) KODON 1034 GEN PFMDR1 PADA PENDERITA MALARIA FALCIPARUM DI WILAYAH KERJA PUSKESMAS HANURA, KABUPATEN PESAWARAN, PROVINSI LAMPUNG

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**Latar Belakang:** *Plasmodium falciparum* merupakan salah satu jenis Plasmodium yang dapat menyebabkan penyakit malaria. *Plasmodium falciparum* yang resisten terhadap obat anti malaria disebabkan oleh adanya mutasi genetik. Adanya *Single Nucleotide Polymorphism* pada kodon 1034 gen *Plasmodium Falciparum Multidrug Resistance 1* (Pfm<sub>dr</sub>1) dapat menjadi penanda genetik resistensi obat klorokuin terhadap *Plasmodium falciparum*. Pemeriksaan yang dilakukan berbasis biologi molekuler sudah banyak diteliti untuk mendeteksi polimorfisme gen melalui *Polymerase Chain Reaction* (PCR) dan dianalisa secara sekuensing.

**Metode:** Jenis penelitian ini menggunakan rancangan penelitian survey dan bersifat deskriptif. Sampel penelitian diperoleh dari Bahan Biologi Tersimpan (BBT) sebanyak 22 sampel. Penelitian ini dilakukan dengan menggunakan metode PCR yang dianalisis dengan metode sekuensing untuk mendeteksi polimorfisme pada kodon 1034 gen Pfm<sub>dr</sub>1.

**Hasil:** Terdapat 22 sampel yang telah dilakukan nested PCR, kemudian 12 sampel dilanjutkan sekuensing dengan hasil kodon 1034 gen Pfm<sub>dr</sub>1 pada seluruh sampel adalah bersifat *wild-type*.

**Kesimpulan:** Tidak terdapat *Single Nucleotide Polymorphism* kodon 1034 gen *Plasmodium Falciparum Multidrug Resistance 1* (Pfm<sub>dr</sub>1).

**Kata Kunci:** Kodon, *Plasmodium Falciparum Multidrug Resistance 1* (Pfm<sub>dr</sub>1), *Polymerase Chain Reaction* (PCR).