

## ABSTRACT

### GENETIC VARIATIONS of *Plasmodium falciparum* GLUTAMATE RICH PROTEIN (GLURP) FROM MALARIA PATIENTS IN WORKING AREA PRIMARY HEALTH CARE HANURA, PESAWARAN, LAMPUNG

By

Rachman Aziz

**Background:** *Plasmodium falciparum* is one type of Plasmodium which found in malaria and has a tendency be resistant to antimalarial drugs due for genetic variation. *Glutamate Rich Protein* (GLURP) is one of the genetic markers found in *Plasmodium falciparum*. Examinations conducted on the basis of molecular biology have been extensively studied to diagnose malaria specifically and accurately, namely *Polymerase Chain Reaction* (PCR).

**Method:** This type of research use survey research design and is descriptive. The sample of research was obtained from Biological Saved Materials (BSM) as many as 23 samples. The examination was performed using by PCR method to detect genetic variation.

**Result:** The results showed that 23 samples were successfully performed nested PCR with similar results of allele variations ie R0, R1 and R2. The dominant allele found is R2. Two allele infections are found in variations R0-R2 and R1-R2, as many as two and one sample

**Conclusion:** There are genetic variations of the PfGLURP gene from malaria patients in the working area of Primary Health Care Hanura, Pesawaran Regency, Lampung Province and found genetic variation of the PfGLURP gene that is allele R0, R1 and R2. The dominant allele in the PfGLURP gene is R2 (54.2%).

**Keyword:** Glutamate Rich Protein (GLURP), *Plasmodium falciparum*, Polymerase Chain Reaction (PCR).

## ABSTRAK

### VARIASI GENETIK *Plasmodium falciparum* Glutamate Rich Protein (GLURP) DARI PENDERITA MALARIA DI WILAYAH KERJA PUSKESMAS HANURA, KABUPATEN PESAWARAN, PROVINSI LAMPUNG

Oleh

Rachman Aziz

**Latar Belakang:** *Plasmodium falciparum* merupakan salah satu jenis Plasmodium pada malaria dan memiliki kecenderungan resisten terhadap obat antimalaria yang disebabkan adanya variasi genetik. *Glutamate Rich Protein (GLURP)* adalah salah satu petanda genetik yang terdapat pada *Plasmodium falciparum*. Pemeriksaan yang dilakukan berbasis biologi molekuler sudah banyak diteliti untuk mendiagnosis malaria secara spesifik dan akurat diantaranya *Polymerase Chain Reaction (PCR)*.

**Metode:** Jenis penelitian ini menggunakan rancangan penelitian survey dan bersifat deskriptif. Sampel penelitian diperoleh dari Bahan Biologi Tersimpan (BBT) sebanyak 23 sampel. Pemeriksaan dilakukan dengan menggunakan metode PCR untuk mendeteksi adanya variasi genetik.

**Hasil:** Hasil penelitian menunjukkan bahwa 23 sampel telah berhasil dilakukan *nested PCR* dengan hasil terdapat variasi alel yaitu R0, R1 dan R2. Alel dominan yang ditemukan adalah R2. Infeksi dua alel ditemukan pada variasi R0-R2 dan R1-R2, sebanyak dua dan satu sampel

**Kesimpulan:** Terdapat variasi genetik gen PfGLURP yang berasal dari penderita malaria di wilayah kerja Puskesmas Hanura, Kabupaten Pesawaran, Provinsi Lampung dan ditemukan adanya variasi genetik dengan alel yang dominan pada gen PfGLURP adalah R2 (54,2%).

**Kata Kunci:** *Glutamate Rich Protein (GLURP)*, *Plasmodium falciparum*, *Polymerase Chain Reaction (PCR)*.