

## Documents

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### **The genetic polymorphism of Plasmodium vivax genes in endemic regions of Thailand**

(2011) *Asian Pacific Journal of Tropical Medicine*, 4 (12), pp. 931-936. Cited 1 time.

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#### **Abstract**

Objective: To investigate the genetic polymorphism of Plasmodium vivax (*P. vivax*) PvCSP and PvMSP1 genes from field isolates at four endemic regions (North, East, West and South) of Thailand. Methods: The 152 *P. vivax* infected cases from dried blood spots were DNA extracted and confirmed by species-specific primer sets using multiplex PCR method. PvMSP1 fragments F2 and F3; PvCSP were genotyped using RFLP-PCR method. Results: Totally amplified DNA which was multiple genotypes for PvMSP1 F2 and PvMSP1 F3 were 12.50% and 8.55%, respectively while PvCSP was 3.95%. The overall frequency of multiple genotypes was 25%. There were 12 allele types of PvMSP1 F2 using AluI enzyme digestion and 8 size variations were found in PvMSP1 F3. The isolates from western region was highly genetic diverse when compare among all isolates. The predominant variant type of PvCSP gene was VK210 type. Conclusions: The multiple genotypes are common found in Thailand and it might hide the real genotype. PvCSP does not have extensive genetic diversity in this study. However, PvMSP1 marker due to multiple genotypes is difficult to be analyzed. The multiple genotypes findings might stem from population migration and vector species findings. © 2011 Hainan Medical College.

#### **Author Keywords**

Genetic polymorphism; Plasmodium vivax; PvCSP; PvMSP1

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