SIZE POLYMORPHISM IN TWO PLASMODIAL GENES AS DETECTED BY POLYMERASE CHAIN REACTION (PCR)

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Two plasmodial genes (merozoite surface antigen: MSA II gene of Plasmodium falciparum and schizont surface antigen: PV200 of P.vivax) have been amplified by PCR. Parasite DNA for P.falciparum and P.vivax were obtained from laboratory cultured isolates of HB3 and 3D7A lines and from 6 field isolates in Sri Lanka respectively. For MSA II gene, primers were made to cover a length streching for 500 base pairs including a repeat region and primers for PV200 gene were designed to cover a length of 1.7 Kilo bases including variable regions.

In both amplifications (MSA II and PV200 genes) preliminary results showed the existance of size variation of PCR fragments of genes. Thus, both genes vary in size in laboratory cultured parasite isolates of P.falciparum and field isolates of P.vivax. From these preliminary results we suggest that the genetic structure of MSA II and PV200 genes are different in different isolates. This kind of genetic variation might hinder the development of malaria vaccines where both MSAII and PV200 have been considered as possible vaccine candidates.

Direct sequencing analysis of each PCR fragment of MSA II and PV200 has been done and reading of the sequences is underway. More amplifications of PV200 gene using field isolates are also being done.