SEQUENCE ANALYSIS AND APPLICATION OF CLONED DNA FROM <u>PLASMODIUM FALCIPARUM</u>

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ABSTRACT

DNA from the human parasite, P. falciparum, isolate K1*, was cloned in Pst I/EcoR I site of pBR 322 vector and transformants were selected through ampicillin-sensitive and tetracycline-resistant characteristics. One clone, pBR K1-14, was used as a probe in Southern hybridization with various Plasmodial DNA cut with a number of restriction enzymes. The probe could differentiate between two different isolates (K1 and G112) and between fresh isolates and those maintained for a long period under in vitro cultivation (K1 and K1*, or G112 and G112*), but indicated no differences between original isolates (K1 and G112) and those obtained after 50 generations (K1' and G112'). Furthermore, the probe could be used to detect P. falciparum oocyst and sporozoite DNA in infected Anopheles mosquitoes. The sequence of parasite DNA insert of pBR K1-14 was determined by the Maxam-Gilbert method. Preliminary data indicated that the 760 base-pair fragment had 18 % GC content, a running sequence of 20 thymine residues and some repeating sequence units.