MOLECULAR CLONING OF PLASMODIUM VIVAX DNA

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
(BIOCHEMISTRY)

IN THE

FACULTY OF GRADUATE STUDIES

OF

MAHIDOL UNIVERSITY

1985

BANGKOK, THAILAND
Abstract

Genomic library of *P. vivax* was cloned into *E. coli* using plasmid vector pBR-322 at PstI/EcoRI sites.

2,500 recombinant plasmids were screened for *P. vivax* specific clones. There were 40 clones which were tentative to be *P. vivax* specific. The insert sizes of these plasmids ranged from less than 500 bases pairs to 2.5 Kb. Two specific clones in the plasmid vector, pBRV58 and pBRV20, were used as radioactive probes for detection of *P. vivax* DNA. Both had a sensitivity of 3-5 ng DNA or $10^4 - 10^5$ parasites without cross-hybridization with human DNA, *P. falciparum*-KL, other mice malaria and mosquito Anopheles dirus A, B, C, D, pBRV20, 80, 58 and 76 were used in restriction mapping by hybridization with EcoRI cut *P. vivax* DNA and gave signals consisting of a few major bands (2Kb to 20 Kb) which should be useful for *P. vivax* characterization.

Note: *P. vivax* DNA in this study indicates total DNA from infected blood containing *P. vivax* DNA purified as in Materials and Methods.
Fig 1  Life cycle of malaria parasites. (Adapted from Jeffrey and Leach, 1976, Atlas of Medical Helminthology & Protozoology.)