

C025319 : MAJOR ZOOLOGY

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WANNEE ANGKASIRISAP : PRODUCTION OF MONOCLONAL ANTIBODIES AGAINST THE
ERYTHROCYTIC STAGES OF PLASMODIUM FALCIPARUM. THESIS ADVISOR : ASSO.
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Production of monoclonal antibodies (MAbs) against the blood forms of Plasmodium falciparum was made after fusion of NS-1 myeloma cells with the spleen cells from an immunised Balb/c mice. In eight fusion experiments 1024 hybrids were obtained of which 177 (17.5%) secreted malaria specific antibodies. From 13 hybrids 58 monoclonal lines were obtained by single cell cloning. MAbs could be divided into 6 groups based on their immunofluorescent staining patterns. Group 1 MAbs reacted with rhoptry organelle of schizont and merozoite. Group 2 MAbs reacted strongly with the cell surface of schizont and intraschizont merozoites which took the form of a cluster of grapes. Group 3 MAbs reacted to produce a pattern of intensely bright dots around the infected red blood cell membrane. Group 4 MAbs showed bright staining of the cytoplasm of all blood stages including gametocytes. Group 5 MAbs reacted with the parasitophorous vacuole membrane. Group 6 MAbs reacted with the cytoplasm and the cell surface of all blood stages including gametocytes.

MAbs group 2 to 6 were used to demonstrate considerable antigenic diversity in 18 isolates of P.falciparum which were obtained from patients in endemic areas of Thailand. Different isolates were distinguished by their ability to react with certain antibodies and those isolates could be divided into 10 different types.