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FLUORESCENCE IN SITU HYBRIDIZATION (FISH) ASSAYS FOR DIAGNOSING MALARIA IN ENDEMIC AREAS

Malaria is a responsible for approximately 600 thousand deaths worldwide every year. Appropriate and timely treatment of malaria can prevent deaths but is dependent on accurate and rapid diagnosis of the infection. Currently, microscopic examination of the Giemsa stained blood smears is the method of choice for diagnosing malaria. Although it has limited sensitivity and specificity in field conditions, it still remains the gold standard for the diagnosis of malaria. Here, we report the development of a fluorescence in situ hybridization (FISH) based method for detecting malaria infection in blood smears and describe the use of an LED light source that makes the method suitable for use in resourcelimited malaria endemic countries. The *Plasmodium* Genus (P-Genus) FISH assay has a *Plasmodium* genus specific probe that detects all five species of *Plasmodium* known to cause the disease in humans. The P. falciparum (PF) FISH assay and P. vivax (PV) FISH assay detect and differentiate between P. falciparum and P. vivax respectively from other *Plasmodium* species. The FISH assays are more sensitive than Giemsa. The sensitivities of P-Genus, PF and PV FISH assays were found to be 98.2%, 94.5% and 98.3%, respectively compared to 89.9%, 83.3% and 87.9% for the detection of *Plasmodium*, P. falciparum and P. vivax by Giemsa staining respectively.

Biography

Ranjan Ramasamy graduated from the University of Cambridge, UK and then obtained a PhD also from the University of Cambridge. He has since held academic appointments in the UK and abroad including Australia, Sri Lanka and the USA. He was the Chairman of the National Science Foundation of Sri Lanka, Professor of Life Sciences at the Institute of Fundamental Studies in Kandy in Sri Lanka, Professor of Biochemistry in the University of Jaffna in Jaffna Sri Lanka, Professor of Immunology in the University Brunei Darussalam Medical School and held institute/ university appointments at the Scripps Clinic and Research Foundation in La Jolla in the USA, University of Nairobi in Kenya, King Faisal University in Dammam in Saudi Arabia, the Queensland Institute of Medical Research in Australia, Anglia Ruskin University in England and the London School of Hygiene and Tropical Medicine in England. He has more than 200 publications in fields pertaining to Medical Sciences.

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