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PLASMODIUM VIVAX: ISOLATION OF MATURE ASEXUAL STAGES AND GAMETOCYTES FROM INFECTED HUMAN BLOOD BY COLLOIDAL SILICA (PERCOLL) GRADIENT CENTRIFUGATION

Kamini N. Mendis *and* **R. L. Ihalamulla**
(*Dept. of Parasitology, Faculty of Medicine, University of Colombo, Colombo* 8)

Immunological and biochemical research on human malaria require substantial numbers of parasites or parasitised erythrocytes free of contamination with other host components such as uninfected erythrocytes. The unavailability to date, of a satisfactory technique for the isolation and purification of *Plasmodium vivax* infected human erythrocytes has hindered the progress of research on this important human malaria parasite. In this study we present for the first time a method for the isolation of mature asexual stages and gametocytes from infected human blood by using colloidal silica (Percoll) gradient centrifugation.

Densities of human red cells infected with various blood stages of *P. vivax* were ascertained for the first time by isopycnic centrifugation in Percoll (Polyvinylpyrrolidone coated colloidal silica) gradients. Using this data, a simple one step gradient of 47% Percoll was devised to isolate red cells infected with asexual stages and gametocytes of *P. vivax* from uninfected erythrocytes. By this method a very high degree of purity (95%–100%) as well as a high yield (90%–100%) of infected erythrocytes were obtained. Parasites isolated by this method were morphologically unaltered, and they retained their viability as shown by the fact that exflagellation could be successfully induced in male gametocytes after purification. The antigenicity of asexual parasites isolated by this method was tested by Indirect Immunofluorescence and was found to be unaltered.

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