

## **ESTABLISHMENT OF NOVEL HUMAN HEPATOCYTE CELL LINE FOR *IN VITRO* DEVELOPMENT OF *P. VIVAX* LIVER STAGES**

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Continuous culture of human hepatocytes (HC-04) was developed to study the exoerythrocytic stage of human malaria. This cell line was derived from primary culture of human hepatocytes. HC-04 cells have proliferated freely in serum and hormone-supplemented medium after 1 year in continuous culture. Cytogenetic analysis showed a hyperdiploid karyotype. HC-04 cells were subcultured into 96 well plates 2 days before inoculation of *P. vivax* sporozoites. The sporozoites were semi-aseptically harvested from salivary glands of mosquitoes fed on *P. vivax* infected blood. Fifty thousand sporozoites were added to each well of HC-04 cells. Human red cells (blood group O) were added at different time interval. Exoerythrocytic merozoites were observed from cells harvested on day 4 to 28 post-sporozoite inoculation. Invasion of human erythrocytes co-cultured with the exoerythrocytic parasites was observed on day 7 after sporozoite inoculation. This study shows that HC-04 cells support complete development and can be used for *In vitro* culturing of *P. vivax* liver stages. The implications of using this *In vitro* model to replace animal models for the study of anti-malaria drugs and vaccines will be discussed.

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