

Usefulness of the recombinant liver stage antigen-3 for an early serodiagnosis of *Plasmodium falciparum* infection

Hyeong-Woo LEE, Sung-Ung MOON, Hye-Sun RYU, Yeon-Joo KIM, Shin-Hyeong CHO, Gyung-Tae CHUNG, Khin LIN, Byoung-Kuk NA, Yoon KONG, Kyung-Suk CHUNG and Tong-Soo KIM

Korean Journal of Parasitology, Vol. 44, No. 1: 49-54, March 2006

Abstract

In order to develop tools for an early serodiagnosis of *Plasmodium falciparum* infection, we evaluated the usefulness of *P. falciparum* liver stage antigen-3 (LSA-3) as a serodiagnostic antigen. A portion of LSA-3 gene was cloned, and its recombinant protein (rLSA-3) was expressed in *Escherichia coli* and purified by column chromatography. The purified rLSA-3 and 120 test blood/serum samples collected from inhabitants in malaria-endemic areas of Mandalay, Myanmar were used for this study. In microscopic examinations of blood samples, *P. falciparum* positive rate was 39.1% (47/120) in thin smear trials, and 33.3% (40/120) in thick smear trials. Although the positive rate associated with the rLSA-3 (30.8%) was lower than that of the blood stage antigens (70.8%), rLSA-3 based enzyme-linked immunosorbent assay could detect 12 seropositive cases (10.0%), in which blood stage antigens were not detected. These results indicate that the LSA-3 is a useful antigen for an early serodiagnosis of *P. falciparum* infection.