BRIEF REPORT

ELEVATED T-CELL RESPONSE IN LIVER OF MICE VACCINATED WITH ATTENUATED KOREA VACCINIA VIRAL VACCINE EXPRESSING *PLASMODIUM VIVAX* CIRCUMSPOROZOITE PROTEIN

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Abstract. Relapse and recurrence of vivax malaria is still a major issue in temperate regions including Korea. Recombinant attenuated vaccinia virus KVAC103 expressing circumsporozoite protein (CSP), one of the main antigenic proteins of *Plasmodium vivax*, (KVAC-PvCSP) was generated and evaluated for its potential as an anti-malarial vaccine. Mice were subcutaneously inoculated twice with KVAC-PvCSP, with a three-week interval between injections, and cellular as well as humoral immune responses, including memory B cell response, were examined. Serial inoculation of KVAC-PvCSP elicited strong IgG production in mice. Moreover, $CD3^+$, $CD4^+$ and $CD8^+$ T-cells were increased by vaccination in mouse hepatocytes, but not in splenocytes. Thus, serial KVAC-PvCSP vaccination elicited $CD4^+$ and $CD8^+$ T-cell responses in the liver of mice. These results suggest KVAC103-based vaccination may be useful for targeting pre-erythrocytic stages of vivax malaria.

Keywords: *Plasmodium vivax*, circumsporozoite protein, malaria, vaccine, vaccinia virus

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