

Dissertation Evaluation Report

Report No.	Diploma Number: D-BIO 1385	Applicant's Name	Chaiyawong Nattawat
Evaluators	Print name		
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<p>Evaluation Report of Dissertation</p> <p>1 . Evaluation of the research purpose.</p> <p><i>Plasmodium</i> protozoan parasites are the causative agents of malaria. For human malaria, pathogenesis is due to asexual stage proliferation within erythrocytes. Therefore, erythrocyte invasion is an essential step for the development of the blood stage <i>Plasmodium</i> and pathology. The proteins secreted by micronemes are thought to play an important role in this process. The objective of this study is to determine the role of acylated pleckstrin homology domain-containing protein (APH), a microneme protein, on microneme discharge. The purpose is clearly described and reasonable.</p> <p>2 . Evaluation of the research methods.</p> <p>The applicant constructed conditional knockout rodent malaria parasites, <i>Plasmodium yoelii</i> lines, using a DiCre-loxP inducible knockout system to determine the effect of APH deletion on the secretion of microneme proteins, MTRAP and AMA1. The research methods were appropriate, well-designed, and soundly performed.</p> <p>3 . Evaluation of the analysis, interpretation and discussion.</p> <p>The applicant found that APH deletion drastically reduced erythrocyte invasion and parasite number in the asexual stage, with some parasites retaining the ability to invade and grow without APH. APH deletion impaired the secretion of microneme proteins, MTRAP and AMA1. However, MTRAP secretion was dependent on contact with erythrocytes, but AMA1 secretion was not. The results were appropriately discussed.</p> <p>As stated above, the dissertation will greatly contribute to the elucidation of a pathogenic mechanism of malaria parasite, and the evaluators uniformly agree that the dissertation is worthy of being approved for a Doctor of Philosophy in Medical Science.</p>			