

Dissertation Evaluation Report

Report No.	Diploma Number: D-BIO 1386	Applicant's Name	Keith Kaplangat Talaam
Evaluators	Print name		
	Chief Evaluator: <u>Yoshimasa Tanaka</u>		
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Evaluation Report of Dissertation			
<p>1 . Evaluation of the research purpose.</p> <p><i>Schistosoma mansoni</i> causes a devastating parasitic infection in tropical areas including African countries. Because of the emergence of strains resistant to praziquantel, the only therapeutic agent for this infection, it is imperative to develop novel classes of compounds with distinct mechanisms. In this study, the applicant sought to examine whether or not a mitochondrial respiration chain could be a drug target using a set of compounds that had been shown to affect known metabolic pathways. The research purpose is, therefore, appropriate.</p>			
<p>2 . Evaluation of the research methods.</p> <p>The applicant screened 116 compounds that had been demonstrated to affect specific metabolic pathways. The assay systems used in this study were <i>in vitro</i> cercarial motility and viability assays, <i>in vitro</i> schistosomula motility and viability assays, <i>ex vivo</i> adult parasite motility and viability assays, an <i>in vivo</i> prophylactic activity assay, an <i>in vivo</i> therapeutic assay, and an oxygen consumption rate assay. The research methods are, therefore, appropriate.</p>			
<p>3 . Evaluation of the analysis, interpretation and discussion.</p> <p>The applicant identified eight compounds, which were categorized into the inhibitors of the electron transport chain, an uncoupler, ROS, and mitochondria-related processes. In addition, the applicant demonstrated that some compounds could be used as prophylactic and therapeutic drugs. The analysis, interpretation and discussion are well structured.</p>			
<p>As stated above, the dissertation will greatly contribute to the development of therapeutics for drug-resistant <i>Schistosoma mansoni</i>, and the evaluators uniformly agree that the dissertation is worthy of being approved for a Doctor of Philosophy in Medical Science.</p>			