FINAL REPORT

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NUTRIENT COMPOSITION OF MARINE THRAUSTOCHYTRID AND ITS IMMUNOSTIMULATORY EFFECT ON MARINE FINFISH

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ABSTRACT

Marine thraustochytrids are found widely in marine environment and they have an important role in decomposing organic material in mangrove areas. *Thraustochytrids* especially those belonging to genus *Schizochytrium* had became the focus in the production of docosahexaenoic acid (DHA). They emerged as a potential producer of carotenoids and many other products of biotechnology importance. This report describes the isolation and molecular characterization of marine thraustochytrids mainly from the genus *Schizochytrium* from different mangrove areas in Sabah. The marine thraustochytrids were isolated from fallen senescence mangrove leaves. Identification of the thraustochytrids was initially achieved by microscopic observation of the cell's morphology. Subsequently, eight isolates were further characterized and identified using 18S rRNA gene sequencing method. BLAST analysis of the DNA sequences of the 18S rRNA gene from these isolates showed that they are classified under two genera which included *Aurantiochytrium*, and *Schizochytrium*. The phylogenetic analysis of the DNA sequences in comparison to other DNA sequences of similar organisms deposited in the genbank suggested that three of the isolates came under the genus *Schizochytrium* whereas the other five isolates were grouped under the genus *Aurantiochytrium*. It is indeed interesting to determine the nutritional composition of the marine thraustochytrids but due to funding limitation such study was not conducted.