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Nur Adila binti Othman @ Yahaya was born on 23rd April 1997 in Sik, Kedah. She received early education in Sekolah Kebangsaan Sik and Sekolah Menengah Kebangsaan Sik until 2014. Next, she continued her study at Kedah Matriculation college for a year before entering Universiti Putra Malaysia in 2016. She studied for four years in Bachelor of Science in Biochemistry and finished her studies in August 2020 with CGPA 3.51. As for her final year project, she was assigned under supervision of Assoc. Prof Dr Zetty Norhana Balia Yusof in Plant Algae Biotechnology Biochemistry Laboratory with topic that related to molecular work such as DNA extraction, RNA extraction and Polymerase Chain Reaction (PCR). In addition, she had completed her industrial training in Malaysian Agricultural Research and Development (MARDI) for 10 weeks with project that related to protein analysis of Moringa seeds. Currently, she works as Data Entry Executive in Australian Clinical Laboratory since September 2020 until now.

**DETERMINATION OF TRANSGENE STABILITY IN *Nannochloropsis* sp.
TRANSFORMED WITH IMMUNOGENIC PEPTIDE FOR VACCINATION
AGAINST VIBRIOSIS**

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ABSTRACT

Microalgae are photosynthetic organisms that can be found in freshwater and also marine systems. They are commonly used as feed for aquatic organisms and also livestock. Aquaculture is the cultivation of aquatic organisms such as fish, prawns and others. However, nowadays the higher rate of diseases occurring in aquaculture is causing a huge loss in the economy. Vibriosis is one of the common diseases caused by Gram-negative bacteria from the genus *Vibrio*. To treat vibriosis, vaccination has been proven to be the most effective treatment as it can avoid the risk of drugs or antibiotics resistance. This study focused on the use of microalga, *Nannochloropsis* sp. as a vaccine carrier. This microalga is one of the highly utilised species for fish feed. Transgenic *Nannochloropsis* sp. harbouring an outer membrane protein kinase (OmpK) gene fragment of the *Vibrio* species namely V1, V2, CV1, CV2, CPV1 and CPV2 were utilised in this study. This study aims to determine the stability of heterologous gene in transgenic *Nannochloropsis* sp. Apart from that, transcriptomics of the transgenic *Nannochloropsis* sp. will also be investigated for the expression of the heterologous gene. DNA and RNA from the *Nannochloropsis* sp. transgenic lines were extracted and were subjected to PCR for amplification of OmpK. Based on the results obtained, the OmpK genes were successfully amplified and expressed up to the fifth generation (F5). For V1, V2, CV1 and CV2 the gene was present and expressed in fourth-generation (F4) and fifth-generation (F5) but CPV1 and CPV2 the OmpK genes were present up to F4. Further optimization of transfection of *Nannochloropsis* sp. should be done as the stability is only up to the F5. Therefore, from the results obtained, we can conclude that *Nannochloropsis* sp. is suitable to be used as a vaccine carrier and can help to treat the vibriosis disease via oral vaccination.