

**Molecular characterization of three *Vibrio* species and study its pathogenic potential in a gnotobiotic *Artemia* model**

Nurfarizatul Z.Z.<sup>a</sup>, Diyana N.K.P.<sup>a</sup>, Amirah F.M.<sup>a</sup>, Jasmin Y.<sup>a</sup>,  
Karim M.<sup>a,b</sup> and Ina-Salwany M.Y.<sup>a, b,\*</sup>

<sup>a</sup>Department of Aquaculture, Faculty of Agriculture, Universiti Putra Malaysia,  
43400, Serdang, Selangor, Malaysia.

<sup>b</sup>Laboratory of Marine Biotechnology, Institute of Bioscience, Universiti Putra Malaysia,  
43400, Serdang, Selangor, Malaysia.

**Abstract**

Vibriosis remains the main problem in aquaculture industry caused by bacteria from the genus *Vibrio*. This study was developed to identify and differentiate between the three *Vibrio* species which are *Vibrio harveyi*, *V. alginolyticus* and *V. parahaemolyticus* by PCR-outer membrane protein (ompW) gene. Three specific bands with size of 643 bp were produced and sequence analysis of three *Vibrios* used in this study showed high similarities of *V. harveyi*, *V. alginolyticus* and *V. parahaemolyticus* with published sequences, respectively. Thus, ompW gene can be used as phylomarker in differentiating *Vibrio* isolates. The effect of pathogenicity of local *Vibrios* strains with different concentrations on host-microbe interaction has been studied in the gnotobiotic *Artemia*. After challenged, investigation revealed that maximum mortality of *Artemia* was observed at the concentration of 10<sup>7</sup> CFU/mL with *V. parahaemolyticus* have a highest mortality rate.

Keywords: *Vibrio* species, ompW, gnotobiotic *Artemia*.

\*Corresponding author: salwany@upm.edu.my