

Genetic Diversity of Tiger Groupers (*Epinephelus fuscoguttatus*) Challenged with *Vibrio Parahaemolyticus* and Exposed to Extreme Low Salinities

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Abstract : This study was conducted to determine genetic diversity of tiger groupers that are resistant to *V. parahaemolyticus* and tolerant to low extreme salinities. This research is useful to obtain superior broodstock of fish. Tiger grouper used were 6 to 8 cm obtained from Brackish Water Aquaculture Research Center Gondol (Bali). This study consists of four stages: preliminary stage was adaptation of fish exposed to several concentrations of *V. parahaemolyticus* (103, 104, 105, 106, and 107 CFU / ml); second stage was test of Lethal Concentration (LC50) of bacteria to fish; third stage was salinity tolerance test (low salinity 12, 14 and 16 ppt) and fourth stage was analysis of DNA profiles. For DNA profiles analysis, genomic DNA of fish were extracted for PCR using primers YNZ-22 and UBC-122 and visualized by electrophoresis method. The results showed that Lethal concentration of bacteria (LC50) to fish was 1,56x10⁶ CFU/ml. Furthermore, survival rate of groupers exposed with low salinities (12, 14, 16 ppt) survival rates were found to be 54,17 %, 66,67 % and 79,16 % respectively. Average of DNA fragment (5 fragments) generated from primer UBC-122 in the group of fish resistant to *V. parahaemolyticus* and tolerant to low salinities was similar to group of susceptible to low salinities. Primer YNZ-22 generated more diverse of DNA fragments (8,0 and 5,8 fragments) both in the group of fish tolerant and susceptible to low salinities compared to primer UBC-122 (5,0 fragments). Size of DNA 1.5 kb resulted from primer YNZ-22. Primer YNZ-22 generated 4 (50 %) and 3 (42,8 %) polymorphic fragments in the group of fish tolerant and susceptible to low salinities, respectively. Four (4) monomorphic fragments were found both in the group of fish tolerant and susceptible to low salinities. Primer UBC-122 generated 6 (85,7 %) and 9 (90,0 %) polymorphic fragments in the fish tolerant and susceptible to low salinities, respectively.

Keywords : genetic diversity, *epinephelus fuscoguttatus*, *V. parahaemolyticus*, PCR-RAPD, low extreme salinity

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