

Z101 **Genetic Diversity and Similarity between the Genus Pavlova and Chaetoceros Analyzed by PCR-RAPD**

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Genomic DNA was isolated from the marine microalgae in the Yellow Sea representing genetic characteristics and genomic polymorphisms by polymerase chain reaction amplification of DNA as arbitrary primers. The electrophoretic analysis of PCR-RAPD products showed high levels of variation between different genus and a little variation between different species. Individual fragments generated using the same arbitrary primer, demonstrated that a single primer detected at least three independent genomic polymorphisms in microalgae. There were observed a total of 119 species-specific genetic markers within the genus Pavlova. On average, each random RAPD primer produced amplified 5.0 products from 3.0 to 6.8 bands. The specific bands produced by random RAPD primer MSP-1 showed 5.3 in the genus Pavlova. The arbitrary primer MSP-6 yielded the highest number of fragments with the average of 5.0 among the primers used. The degree of similarity frequency between the species *Chaetoceros calcitrans* and *Chaetoceros neogracile* showed 0.86 as produced by the primer MSP1. While the genetic similarity frequency within the genus Pavlova showed 0.80, average genetic similarity within the genus *Chaetoceros* was 0.88. Accordingly, these two genera were genetically distant. The RAPD polymorphism generated by this primer may be used as a genetic marker for genus or species identification in important marine microalgae. The RAPD-PCR technique allows for the isolation of informative molecular probes to be utilized in DNA fingerprinting and genome identification. It is concluded that RAPD polymorphisms are useful as genetic markers not only for marine microalgae but also for important fish species differentiation in the aquaculture industry. Additionally, it seemed to be essential to get better data on the genetic distances between a large quantity of microalgae populations.