Study of Mitochondrial DNA (mtDNA) of Blue Swimming Crab (*Portunus pelagicus*)

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Abstract

Nowadays, Blue swimming crab *(Portunus pelagicus)* was rapidly demanded because it contains the high amount of nutrients such as protein. Genetic study of *Portunus pelagicus* is important to identify the polymorphism or the variation of gene. The best choice of DNA to study this polymorphism is mitochondrial DNA because it has more conserve regions than chromosomal DNA. Mitochondrial genome contains several genes that involved in the electron transport chain; one of the electron carrier is *cytochrome b*. In this study, the extraction of total DNA and mtDNA from three part of blue swimming crab; appenda part, claw, and blood were performed. Mitochondrial DNA was purified by using differential centrifugation method. Amount and purity of DNA were determined by spectrophotometry and gel electrophoresis. Design and amplification of DNA sequence of *cytochrome b* was done by Polymerase Chain Reaction (PCR) and Bioformatics tool. Quality of the forward and reverse primers was checked by Net Primer Launch program. The results indicated that the mitochondrial DNA from appenda part by using teflon homogenizer shown the high amount and good quality as compared to other parts. The best extraction method of mitochondrial DNA was performed by differential centrifugation. Nevertheless, conditions of PCR were not completely successful due to the variation of the *cytochrome b* in the mitochondrial DNA.