

Thammanoon Jaturapahu 2010: Detection and Identification of *Pseudomonas* spp. in Aquatic Animals. Doctor of Philosophy (Genetic Engineering), Major Field: Genetic Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Mr. Somvong Tragoonrung, Ph.D. 83 pages.

*Pseudomonas* spp. is one of the major bacterial diseases in aquaculture production. The aquatic animals subjected to some type of stress seem to be more susceptible to the disease. The infected animals are usually show haemorrhagic, septicaemia and whirling movement. These pathogen can spread rapidly in the farm. *P. fluorescens* is a dominant pathogen in this group and is economically significant. Monoclonal antibody (MAb) against a *P. fluorescens* was produced with the aim to develop rapid and practical method to detect this pathogen. Two MAbs were produced namely MAb 2E7 and MAb 9A1. To develop rapid method, peroxidase conjugation of the selected MAb (MAb 2E7 and MAb 9A1) was performed. The result showed MAb 9A1 conjugated with peroxidase still recognized *P. fluorescens*. Thus MAb 9A1 was considered to be used as a probe for strain detection and rapid diagnosis kit for *P. fluorescens* in the future.

Furthermore, DNA-based method was also developed for detection and identification purpose. The 16S-23S ribosomal DNA (rDNA) intergenic spacer was characterized and subsequently PCR was developed. The PCR was proven to be specific and sensitive to detect *Pseudomonas* spp. to the sub-clinical infection level. To identify upto species level, specific probes were studies and applied by reverse cross blot hybridization (RCBH). The method was highly specific for *Pseudomonas* spp.

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Thesis Advisor's signature