Example: Abstract format for PSU-JSPS Asian Core Program Symposium 2014, Thailand

Title: Calibri size 12, BOLD, CAPITAL

Marine biotechnology for disease control in shrimp aquaculture

Researcher and co-workers-------------font : Calibri, size 11

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Abstract format: not more than a page (A4) with this margin format; font = Calibri, size 11

Outbreaks of infectious diseases have caused devastating losses to the shrimp cultivation worldwide. Prevention and control of infection in shrimp are essential to sustain the shrimp industry. Two different strategies for disease control in shrimp aquaculture are proposed in this project. In the first strategy, selection for disease resistant shrimp is proposed as it has been shown to be one of several possible interventions to prevent or reduce the economic losses associated with animal disease. Microarray technology and RT-PCR will be applied as a tool for a “first pass screen” to identify the candidate genes associated with Taura syndrome virus (TSV)-resistance in the selected shrimp Litopenaeus vannamei lines. Genomic study of the candidate genes will be performed on resistant and susceptible lines and genomic information obtained will be used to develop molecular markers for the disease resistant trait. These markers will be useful for the future marker assisted selection of shrimp lines that are resistant to TSV disease and for maintenance of the selected lines. In the second part of this project, we proposed another strategy to control the diseases in shrimp aquaculture by the application of shrimp antimicrobial peptides (AMPs) as an alternative to antibiotic use. The candidate shrimp AMPs will be selected, recombinantly produced and their efficacy in protection of shrimp from viral or bacterial diseases will be assessed. These biotechnology researches could provide an important means of reducing infectious diseases in the shrimp aquaculture.

Keywords:
Identification of Differentially Expressed Proteins in Siamese Crocodile (Crocodylus siamensis) infected with Staphylococcus aureus, Edwardsiella tarda, Aeromonas hydrophila, and Poly I:C

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In order to investigate the immune response of crocodile during bacterial infection, Siamese crocodiles (Crocodylus siamensis) were stimulated with 0.9% NaCl, Polyinosinic:Polycytidylic acid (poly I:C) 200 ug/ml, Staphylococcus aureus 5x10⁷ CFU/ml, Aeromonas hydrophila 5x10⁹ CFU and Edwardsiella tarda 5x10⁹ CFU/ml and then collected plasma samples. After injection, some crocodile died after treated with E.tarda 5x10⁷ CFU/ml, A.hydrophila 5x10⁹ CFU/ml, polyI:C 200 ug/ml, E.tarda 5x10⁹ CFU/ml and normal at 4, 12, 28, 36 and 44 hours respectively. The pathology inflammation was found in many internal organs, mostly in gastrointestinal. Interestingly, crocodiles treated with E.tarda 5x10⁷, and 5x10⁹ CFU/ml was pleural effusion, hemorrhage in liver, kidney swelling and intestinal inflammation was clearly observed more than other stimulants. Matrix-Assisted Laser Desorption/Ionization tandem Time of Flight (MALDI-TOF/TOF) was performed to study protein expression in plasma samples (normal, NaCl, S. aureus 5x10⁷ CFU/ml, E. tarda 5x10⁹, and 5x10⁹ CFU/ml). The result suggested that the pattern of expression was different significantly after stimulation at 4 and 32 hours. The result from sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS–PAGE) revealed that band protein expression 14 and 20 kDa were different in all stimulators. However those protein band from three stimulators normal, poly I:C 2 mg/ml and S.aureus 5x10⁷ CFU were selected to determine peptide sequences by using Liquid Chromatography tandem Mass Spectrometer (LCMS/MS) peptide sequences were searched for similar proteins by using Mascot software, the result suggested that those sequences were matched with glutathione peroxidase 5 (Gpx5) from Mus musculus and Glutathione peroxidase 3 (Gpx3) from Hylobates lar. The presented of Gpx5 was fluctuated in different times after stimulation with poly I:C 2 mg/ml and 5x10⁷ CFU and normal were without stimulation. In contrast, the presented of Gpx3 was founded only in the Crocodile treaded with S.aureus 5x10⁷ CFU.

Keywords: Crocodylus siamensis, MALDI-TOF/TOF, LCMS/MS, Edwardsiella tarda, poly I:C