

Sukanda Muiyung 2013: Isolation and Screening of Potential Lactic Acid Bacteria for Anti-gastrointestinal Tract Pathogens in Animal. Master of Science (Microbiology), Major Field: Microbiology, Department of Microbiology. Thesis Advisor: Assistant Professor Nantana Srisuk, Ph.D. 125 pages.

A total of 162 lactic acid bacteria (LAB) isolated from chicken intestine and feces, sea fish intestine, fermented foods and flower or apex using MRS agar plus 0.5% CaCO<sub>3</sub>. Anti-pathogenic activities to animal digestive tract pathogens was evaluated in all LAB isolates collected. Antagonistic assay showed that 47 LAB isolates inhibited growth of *Salmonella* Typhimurium ATCC 13311 whereas 46 and 45 isolates inhibited growth of *Escherichia coli* ATCC 25922 and *Salmonella* Enteritidis DMST 15676, respectively. These 47 LAB isolates were then screened for anticlostridial activity. Only 2 LAB isolates i.e. SM081 and SM154 were found to be antagonist against *Clostridium perfringens* ATCC 13124. However, assay for phytase activity revealed that none of them possessed phytase activity.

These two LAB were subjected to test for acid tolerance under the pH range of 2.0-3.5 as well as 0.3% bile salt tolerance and high temperature (45°C) tolerance. Results showed that both SM081 and SM154 were tolerant to pH 2.5 and 0.3% bile salt for 5h. Moreover, they were tolerant to high temperature (45°C).

Based on 16S rDNA sequence analysis, the isolates SM081 and SM154 were identified as *Weissella paramesenteroides* and *Lactobacillus plantarum* subsp. *plantarum*, respectively.

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Thesis Advisor's signature