Thesis Abstract

Partial Characterization of Selected Lactic Acid Bacteria from *Nem chua*, a Traditional Fermented Meat of Vietnam

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Nem chua, a traditional fermented meat of Viet Nam, is the product of lactic acid bacteria (LAB) fermentation. Its process includes several steps, in which fermentation is the determinant of the product quality. There are many biochemical and microbiological changes during fermentation. Acid-producing bacteria increased significantly and at the 4th day of fermentation, it reached approximately 8.4 log CFU/g and contributed to 94% of the total bacteria flora of the product. Yeasts were also confirmed to be present in the product and increased during fermentation.

Out of 85 isolates obtained from the product, only 44 were confirmed Gram-positive and catalase-negative. These putative LAB isolates were purified and screened for antimicrobial and proteolytic activity. None of the isolates showed antimicrobial activity with "spot-on-lawn" method but showed inhibition against *Lactobacillus sakei* and *Enterococcus faecium* with direct assay. Most of the isolates showed higher proteolytic activity at pH 7.0 than pH 5.0. Four (4) isolates possess good proteolytic activity, the highest being 18.26 U/mL at neutral pH. All four isolates were identified as *Lactobacillus plantarum* using API 50 CHL i.d. kit. Sequencing of the 16S rRNA gene amplified by primers 1101F (5'-AAC GAG CGC AAC CC-3') and 1407R (5'-GAC GGG CGG TGT GTA C-3') showed 98% homology to *Lactobacillus plantarum* WCFS1.