Tanes Sangsri 2013: Isolation and Selection of Anti *Candida albicans* BCC6120 Metabolites Producing Lactic Acid Bacteria. Master of Science (Microbiology), Major Field: Microbiology, Department of Microbiology. Thesis Advisor: Miss Patcharaporn Siwayaprahm, Ph.D. 139 pages.

Five hundred and fifty-two isolates of lactic acid bacteria (LAB) have been isolated and screened from fermented foods, fruits and dairy effluents on De Mann Rogosa Sharpe (MRS) agar. Fifty-one isolates, in the percentile of 9.24, produced the secondary metabolites that could inhibit the growth of *Candida albicans* BCC6120 by using overlay method. The broth culture supernatant of LAB showed anti-*C. albicans* activity in acidic condition at pH range of 3.0-5.0 by using agar well diffusion method. Interestingly, the isolate L47-2 showed the best colonization surrounding the surface of sterile bamboo stick and test tube when growing in MRS broth. The isolate L47-2 was identified on the basis of morphological and biochemical characteristics and API 50 CHL Test Kit. The identification was confirmed by 16S rRNA gene sequence analysis revealed that isolate L47-2 was similar to *Lactobacillus paracasei* subsp. *paracasei* with 99.65 % nucleotide identity. The isolate L47-2 was subsequently mutated by ultraviolet (UV) radiation at the wavelength of 254 nm for 1 min which only 10% survival could be obtained. The mutant strain, L47-2UV116 exhibited the highest anti-*C. albicans* activity. The results demonstrated that the mutant strain produced the maximum clear zone were 13 millimeter. The mutant strain, L47-2UV116 can still colonize surrounding the surface of sterile bamboo stick and test tube.

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