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Vaginal *Lactobacillus* spp. isolated from Korean women

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Indigenous vaginal *Lactobaillus* spp. play an important role in maintaining vaginal health by producing antimicrobial substances or bacteriocins to inhibit undesirable pathogens. A number of lactobacilli strains were isolated from vagina of korean women and molecularly identified to determine the species prevalence among them. The isolates were initially selected on Rogosa SL agar plate and incubated under anaerobic condition prior to being examined for the typical characteristics of *Lactobacillus* spp. Gram staining, microscopic examination, and catalase test were used to presumptively identify the isolates as *Lactobacillus* spp.. As a result, 106 putative lactobacilli strains were isolated from the vaginal samples of 205 korean women. Further characterization was performed on 106 isolates in terms of their cell surface hydrophobicity (CSH) and antimicrobial activity. Several isolates were chosen with high antimicrobial activity and high CSH. Molecular identification of isolated *Lactobacillus* spp. are currently being carried out using polymerase chain reaction (PCR) followed by restriction fragment length polymorphism (RFLP) analysis as well as DNA sequencing of 16S rDNA.

[SPII-6]

Biochemical and Molecular Characterization of the Extracellular Medium-Chain-Length Polyhydroxyalkanoate Depolymerase from *Pseudomonas alcaligenes* LB19

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More than 75 extracellular poly(3-hydroxybutyrate) (PHB) depolymerases from bacteria and fungi have been purified and characterized. However, there are only three reports on medium-chain-length poly(3-hydroxyalkanoate) (MCL-PHA) depolymerases. In this study, an extracellular (MCL-PHA) depolymerase ($PhaZ_{Pal}$) from *Pseudomonas alcaligenes* LB19 was purified and characterized. The molecular mass of the enzyme, which consisted of a single polypeptide chain, was approximately 28.0 kDa. The p*I* value of the $PhaZ_{Pal}$ was estimated to be 5.7, and its maximum activity was observed at pH 9.0 and 45 ℃. The $PhaZ_{Pal}$ was significantly inactivated by PMSF, EDTA, 0.1% Tween 80, and 0.05% Triton X-100 but insensitive to dithiothreitol. The purified enzyme could hydrolyze various types of bacterial aliphatic and aromatic MCL-PHAs but not PHB, polycaprolactone, and poly(L-lactide). It was able to hydrolyze medium-chain-length *p*-nitrophenylalkanoates more efficiently than the shorter-chain forms. The nucleotide sequence of $phaZ_{Pal}$ consists of 837 bp encoding a protein of 278 amino acids. The $PhaZ_{Pal}$ includes a lipase sequence (GISSG) at the *N*-terminus and many hydrophobic amino acids at the *C*-terminus, indicating that the catalytic domain and substrate-binding domain are located in the *N*-terminus and *C*-terminus, respectively.