

Characterization and Probiotics of *Lactobacillus* sp Y isolated from KimchiByung-Hee Ryu, Kook-Hee Kang*, In-Sun Lee¹, Jung-Hoon Yoon²

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Many probiotic *Lactobacillus* have been selected and shown to have health benefits. Bacteria were isolated from the twenty kinds of Korean Kimchi freshly collected in order to isolate lactic acid bacteria. *Lactobacillus* strain Y is a non motile, nonspore-forming, gram-positive, catalase-negative, short rods isolated on MRS from kimchi. In particular, the strain exhibited 99.6% similarity base sequence based on its 16S ribosomal DNA sequence with *L. sakei* Y. This study indicates that *L. sakei* Y would be an important probiotics. High acid-tolerance of *L. sakei* Y in low pH has the advantage of good surviving in the low pH conditions of stomach (pH 2.0 in extreme cases). *L. sakei* Y was bile-salt resistant, since cells were still growing slowly at high concentration of oxgall although the growth is weaker than control. There was an increase in the CFU following incubation at 2-8% NaCl, and a decrease at 10-18% NaCl. The CFU increased at 37, 45, 50, and 55 °C, and decreased at 60, 70, 80 °C. *L. sakei* Y was usually sensitive to ampicillin, gentamycin, tetracycline, neomycin, erythromycin, lincomycin, cephalothin, carbenicillin, penicillin, sulficoxazole and kanamycin, respectively. *L. sakei* Y exhibited antimicrobial activity against *S. aureus*, *V. parahaemolyticus*, *E. coli*, *S. typhimurium*, *B. cereus*, *B. subtilis*, *L. monocytogenes*, *E. erogenes*, *S. enteritidis*, *C. sputorum*, and *Helicobacter pylori*.

In conclusion, this study provides some important findings concerning a gastrointestinal species of *Lactobacillus sakei* Y. These results warrant a large-scale probiotic study in order to assess these observations. The probiotic characteristics of this bacteria was described as well as clinical trials to determine the eventual therapeutic uses of the *L. sakei* Y. This study shows that the *L. sakei* Y can survive in the human gastrointestinal tract, indicating that it may be used as a potential probiotic starter.