p-114

Characteristics of a plantaricin-producing *Lactobacillus plantarum* and conditions for the bacteriocin production

Chin Hwa-Sub, Jae-Seok Shim, Eui-sook Jung, and Sung-Sik Yoon
Department of Biological Resources and Technology, Yonsei University

A study was conducted to screen a novel antimicrobial substance by lactic acid bacteria present in the *Gajami Sikhae,* and for controlling foodborne pathogenic bacteria. Samples of a traditional fermented food, *Gajami Sikhae,* were collected at several grocery stores in Seoul. Of hundred of fifty isolates recovered on MRS agar, four strains showed antibacterial activities against both seven strains of Gram-positive and four strains of Gram-negative bacteria tested, as indicators. A strain, *L. plantarum* YSD-21, which had the strongest activity against *Lactobacillus brevis* KCCM 40061, was selected for this study. The antimicrobial compound was shown to be a peptide because it lost the activity in the presence of several protease. The result of Intergenic Transcribed Spacer region(ITS)-PCR ribotyping identified this antimicrobial producer as *L. plantarum.* This substance therefore was named plantaricin YSD. Of nine carbon source supplemented in MRS broth, glucose has been chosen for the production of the bacteriocin. The optimal pH was 6.5, and the optimal temperature was 30℃. The bacteriocin was not produced by 8 hour after inoculation and highest activity occurred at 16 hour of incubation at 30℃. The bacteriocin producer apparently shows four plasmid bands with different molecular sizes. It is presumed that these plasmids may be responsible for bacteriocin production.