

Probiotics Characterization of *Lactobacillus acidophilus* SG1003 Isolated from Korean Feces

Sun-Gyu Choi, Kook-Hee Kang*¹, Byung-Hee Ryu¹, Yong-Ha Park and Jun-Hoon Yoon²
HITE Brewery Co., Ltd, R&D Center, ¹Sung Kyun Kwan University,
² Korea Research Institute of Bioscience and Biotechnology

This study was performed for the development of industrially useful probiotic starter using lactobacilli isolated from the intestine of Korean people. The initial cell number of HT-29 cell line was adjusted to approximately 5×10^6 . When culture solution ($50 \mu\text{l}$) of strain SG1003 was incubated together with HT-29 cell, the cell number of HT-29 was 3.5×10^7 after 20 days. When 1/2 and 1/4 diluted culture solutions of strain SG1003 were used, the cell number of HT-29 did not show a noteworthy differences from the result obtained with original culture solution. However, when 1/8 diluted culture of strain SG1003 was incubated together with HT-29 cell, the cell number of HT-29 was increased to 5.9×10^7 after 20 days. Strain SG1003's activity to inhibit the growth of HT-29 cell line appeared after about 4 days. It was found that strain SG1003 exhibits inhibition activity approximately 1.7 times higher than that of one reference strain, *Lactobacillus helveticus* KCTC 3545. In particular, strain SG1003 showed an excellent activity inhibiting the growth of *E. coli* O157:H7. Strain SG1003 was very sensitive to penicillin G but tolerant to sulfamethoxazole, kanamycin and tetracycline.

Key words: Resistance, inhibiting, cancer cell, antibiotics, probiotics.