

P149

Isolation and Identification of *Bacillus subtilis* GSN1218, and Characteristics of Chungkukjang fermented by Isolated Strain

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We attempted to isolate useful strains from Korean fermented soybean foods, Mejoo, Doenjang and Chungkukjang, etc. 16 *Bacillus* species were isolated from a total of 58 samples. Bacterial strains showing the most strong fibrinolytic activity among isolated strains were screened. Finally we selected one strain that showed up to 100 unit/ml fibrinolytic activity, had the best sensory evaluation property, but not made ammonia flavor and bad smell. For the identification of isolated strain, we studied morphological, cultural, biochemical characteristics and carbon source utility. The strain was identified gram positive rod that makes spores. Final identification was performed by Bergery's manual of determinative bacteriology, API 50 CHB & API 20E kit. As a result of biochemical characteristics, motility, oxidase, catalase, glucose, fructose, raffinose and sorbitol were positive. Galactose, rhamnose and arabitol were negative. Citrate utilization and acetoin production(VP) were positive, while indole production, H₂S production, arginine dihydrolase(ADH), lysine dicarboxylase(LDC) and ornithine dicarboxylase(ODC) were negative. It was showed that API identification program results were the same as 93.0% *Bacillus subtilis*, and so named *Bacillus subtilis* GSN1218. *Chungkukjang* was manufactured by *B. subtilis* GSN1218 included mostly glutamic acid among free amino acid. For fibrinolytic enzyme production, the optimal temperature and fermentation time were 37°C and 24 hrs. respectively. The optimum pH of this enzyme was 7.5 and it was stable up to 60°C.