

P22

## Factors Affecting the Efficient Production of Extracellular Proteases in *Bacillus cereus* KCTC 3674

Young Jae Kim

Department of Microbiology, College of Natural Sciences, Changwon National University, Sarim-Dong, Changwon, Kyungnam 641-773, Korea

*Bacillus cereus* KCTC 3674 excretes at least two kinds of extracellular proteases into the growth medium. Two major bands of the protease activity with molecular weights of approximately 100 and 38 kDa were obtained after gelatin-SDS-PAGE. The protease with a molecular weight of 38 kDa was identified as an extracellular neutral (metallo-) protease. The neutral protease was quite thermostabile but labile to alkaline pH. On the contrary, the 100 kDa protease was thermolabile but stable to alkaline pH. The production of 38 kDa neutral protease was strongly affected by temperature, oxygen, carbonylcyanide *m*-chlorophenylhydrazone (CCCP) that was defined as a protonophore, and cerulenin which inhibits lipid synthesis and caused changes in the membrane composition. On the other hand, the production of the 100 kDa protease was strongly affected by only temperature and cerulenin. Quinacrine (0.2 mM), which inhibits the penicillinase-releasing protease of *Bacillus licheniformis*, had no effect, whatsoever, on the production of extracellular proteases in *B. cereus* KCTC 3674.