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Metal ions effect of chitinase from *Bacillus atrophaeus* TBM1652-1 strain.

Yong-Seok Lee, Ju-Soon Yoo, Soo-Yeol Chung¹,
Woo-Hong Joo² and Yong-Lark Choi

Dept. of Biotechnology, Faculty of Natural Resources and Life Science,
Dong-a University, Busan, Korea.

¹Dept. of Food Science and Nutrition, Dong-ju College, Busan, Korea.

²Dept. of Biology, Chang-won University, Chang-won, Korea.

A chitinase encoding gene from *Bacillus atrophaeus* TBM1652-1 was cloned in *Escherichia coli*. The nucleotide sequencing revealed a single open reading frame containing 1818 bp and encoding 606 amino acid with a 66kDa by SDS-PAGE and Zymogram SDS-PAGE and Zymogram. The amino acid sequence of the chitinase has 98% similarity to that of *B. subtilis*, 85% similarity to that of *B. circurans*, 81% similarity to that of *B. licheniformis*, 67% similarity to that of *B. halodrans*. The rate of colloidal chitin hydrolysis was increased by Co^{2+} , Ca^{2+} , Ba^{2+} , Li^{2+} , Mg^{2+} , Cs^{2+} ion, up to 1.5-fold. However, Fe^{3+} , Zn^{2+} , Cu^{2+} , Hg^{2+} ion in the assay solution was strongly inhibited the enzyme. The others(K^+ , Na^+ , EDTA) did not affect the enzyme. Colloidal chitin and diversity chitooligo- saccharide(NAG1-NAG6) was hydrolyzed to chitobiose (NAG2) as a major product by chitinase from *B. atrophaeus* TBM1652-1.