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Purification and Characterization of a Novel Thermophilic Lipase from *Acinetobacter* sp. D12

Park, In-Hye, Yong-Seok Lee, Jie Chang, M. Subhosh Chandra and Yong-Lark Choi*

Department of biotechnology, Faculty of Natural Resources and Life Science Dong-A University, Busan 604-714, Korea

An extracellular lipase from *Acinetobacter* sp. D12, a bacterium isolated from Deog-yu mountain, was found to enhanced production by using olive oil as a carbon source. The enzyme was purified 20-fold by ultrafilteration and anion exchange and Resource Q column chromatography. It revealed a molecular mass of 16 kDa on SDS-PAGE. Lipase activity of the purified enzyme was exhibited as clear band on Native SDS-PAGE containing glycerol trioctanoate as a substrate. The enzyme showed maximum activity at 60°C and a pH of 9 when *p*-nitrophenyl caprate was used as a substrate. It was stable at 50°C and remained at 70°C with 47% of the activity that occurred at 60°C. The purified enzyme is active against a broad range of fatty acid esters (C2 to C16) of *p*-NP, but prefer to hydrolysis *p*-NP caprate.

Key words: Acinetobacter sp., Lipase

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Isolation, Purification and Characterization of a Thermostable β-mannanase From *Paenibacillus xylanilyticus* DZ 3

M. Subhosh Chandra, Narayan Roy, Yong-Seok Lee, In-Hye Park, Yi Zhou, Keun-Ki Kim[1] and Yong Lark Choi

Department of Biotechnology, Dong-a University 840, Hadan-Dong, Saha-gu, Busan 604 714, Republic of Korea.
[1]Division of Applied Life Science, Pusan National University, Miryang 629-906, Republic of Korea.

The *Paenibacillus xylanilyticus* DZ3 was newly isolated from Konjack field, and produced of β-mannanase (900 U/ml) when grown on glucomannan as a sole source of carbon at 37°C. The β-mannanase was purified 34 fold to homogeneity with a final recovery of 15% and a specificity of 169 U/mg protein as judgedby SDS-polyacrylamide gel electrophoresis (SDS-PAGE). The molecular mass was approximately 39 kDa by SDS-PAGE. The active band was observed as clear colourless area on zymogram analysis. The optimal temperature and pH for mannanase activity was 60°C and pH 5.0, respectively. The enzyme activity was stable up to 60°C at pH 5.0 and it was stable within pH 5.0-7.0. The mannanase was highly specific towards glucomannan and galactomannan, but exhibited very low activity towards chitin, CMC and mushroom powder.

Key words: *Paenibacillus xylanilyticus,* Mannanase, Glucomannan,