Journal of Chemical, Biological and Physical Sciences

An International Peer Review E-3 Journal of Sciences

*Available online at*www.jcbsc.org

Section D: Development of Biotechnological Process

CODEN (USA): JCBPAT Research Abstracts

Production and Purification of *N*-acetylglucosaminidases and Endochitinases of *Lecanicillium lecanii* in Submerged Culture

Jesús Rojas-Osnaya, Ulises Carrasco, Angélica Ramos-Puebla, Guadalupe Villa-Lerma, Zaizy Rocha-Pino, Humberto González-Márquez, Keiko Shirai*

[1] Universidad Autónoma Metropolitana, Departamento de Biotecnología, Laboratorio de Biopolímeros, Avenida San Rafael Atlixco No. 186. Col. Vicentina, C.P. 09340, México, D.F.

Abstract: Poli [1,4-(*N*-acetyl-β-D-glucosaminide)] glycanohydrolase (Endo), EC 3.2.1.14, depolymerized chitin to release *N*-acetyl-β-D-glucosamine (GlcNAc), chitobiose, and chitooligosaccharides. These compounds are degraded by chitodextrinases (also EC 3.2.1.14) and β-*N*-acetyl-D-hexosaminidase (Nhase), EC 3.2.1.52, to produce GlcNAc and chitobiose. Despite of reports on chitinases production by *Lecanicillium lecanii* in submerged (SmC) and solid state cultures, there is scarce information related to the specificity of chitinases of *L. lecanii*, therefore, this study focus on production and purification of chitinases for further studies. Nhases and Endo were produced from *L. lecanii* in submerged culture with the addition of coloidal chitin as inducer. Enzyme purification was conducted by salting out with ammonium sulphate, followed by gel filtration and anionic exchange chromatographies. Nhase and Endo activities were determined for each purification step and molecular weights corroborated by electrophoresis. Several purified proteins were attained with 50 kDa and 39 kDa for Nhase and Endo, respectively. Ongoing work is directed toward determination of enzymatic specificities.

Keywords: *Lecanicillium lecanii*, chitinases, submerged culture

Corresponding author: K. Shirai
smk@xanum.uam.mx