

Thesis Title	Optimization of Chitinase Production by <i>Streptomyces</i> MK6-16	
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Abstract

Chitinase production by *Streptomyces* sp. MK6-16 was optimized by assessing activity over a range of cultural conditions. Synthesis of extracellular chitinase was induced by chitin. Highest levels of enzyme activity were 1.29 units/ml, and a specific activity at 3.59 units/mg of protein produced in the medium comprised of 1.5% ball-milled chitin, 3% wheat bran, 0.2% $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, 0.1% KH_2PO_4 , 0.01% FeSO_4 and initial pH 6, using 3.85%(v/v) seed inoculum. Cultures were incubated at 26-29 °C with shaking at 200 rpm for four days. Optimum pH and temperature for chitinase activity were 5.0 and at 40 °C, respectively. The enzyme hydrolyzed colloidal chitin, ball-milled chitin, *Schizophyllum commune* cell wall and carboxymethyl cellulose, but did not hydrolyze maltose, cellobiose and p-nitrophenyl- β -D-N-acetylglucosamine. After precipitation with 40% saturation ammonium sulfate, the specific activity of chitinase increased about 2-fold compared with crude enzyme.