
Purification & Characterization of Industrially Important Cellulase Enzyme

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Abstract.

Cellulase is an industrially important enzyme which produced by Fungi, bacteria, protozoa and termite, that hydrolyze cellulose. Cellulase is expensive and contributes only 50% to the overall cost of hydrolysis due to the low specific activity. This enzyme has enormous potential in industries and is used in medicine, food, beverages, textile, laundry, paper and pulp industries etc. The aim of present study is purification and investigation of cellulolytic properties of cellulase enzyme which produced by various isolated fungi. After screening of cellulase producing fungi by Congo red assay, enzyme was produced by submerged fermentation on various selected bio-wastes. The enzyme assay was carried out by using both Filter Paper Assay (FPase) and Carboxy Methyl Assay (CMase). Purification of cellulase enzyme was carried out by ammonium sulfate precipitation, diethylaminoethyl cellulose and Sephadex gel filtration chromatography. The relative molecular mass of the enzyme was estimated using SDS-Polyacrylamide gel electrophoresis. For the standardization of enzyme, effects of temperature, pH and metals on enzyme activity, stability and the relative rate of hydrolysis of various substrates were also studied.

Keywords:*Cellulase, fungi Species, Gel filtration chromatography, SDS- PAGE.*