Characteristics of thermostable chitinase enzymes from the indonesian *Bacillus* sp.13.26

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Abstract

A chitinase producing bacteria was screened and isolated from Tompaso hot spring in North Sulawesi Indonesia. The gram positive spore forming rod shaped bacteria was identified as *Bacillus* sp. 13.26 through sequence analysis of the 16SrRNA gene. When grown in medium containing 0.5% chitin at 55 °C, the thermophillic bacteria optimally produced extracellular chitinase enzyme after 72 h of incubation. The enzyme was purified through ammonium sulfate fractionation, dialysis, heat treatment at 60 °C for 3 h and chromatographed onto DEAE Sepharose CL-6B.

The optimum temperature and pH of the 60-kD chitinase were found at 60 °C and pH 7–8. The thermostable chitinase still retained the activity after incubation for 5 h incubation at 70 °C. Zymogram analysis confirmed the thermostability of the enzyme ; when heated at 80 °C, the enzyme was still significantly active even after 1 h of incubation.

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