Karakterisasi kitinase kasar dari Trichoderma amazonicum (P. Chaverri & Gazis 2011) LP3 = Characterization of crude chitinase from Trichoderma amazonicum (P. Chaverri & Gazis 2011 LP3

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Abstrak

ABSTRAK
Kitinase merupakan enzim yang berguna dalam degradasi kitin dan dapat dimanfaatkan dalam pengolahan limbah perikanan, biokontrol terhadap jamur fitopatogen, biopestisida, dan produksi protein sel tunggal. Penelitian mengenai karakterisasi kitinase kasar dari Trichoderma amazonicum LP3 dilakukan menggunakan substrat koloidal kitin. Penelitian bertujuan untuk mengetahui produksi dan karakterisasi kitinase kasar yang dihasilkan oleh T. amazonicum LP3. Penentuan aktivitas kitinase dilakukan dengan metode kolorimetri dan produk akhir hasil hidrolisis dianalisis berdasarkan metode Reissig.

Hasil penelitian menunjukkan aktivitas kitinase dari T. amazonicum LP3 tertinggi pada inkubasi hari kedua sebesar 8,22 U/mL. Karakterisasi kitinase kasar menunjukkan aktivitas optimum pada pH 5, suhu 50°C, dan stabil selama 3 jam kondisi pH 5 dan selama 1 jam kondisi suhu 50°C. Ion logam Ca2+, Co2+, Fe2+, Mg2+, Zn2+, dan EDTA 1 mM bersifat sebagai aktivator, sedangkan ion logam Hg2+ dan Cu2+ bersifat sebagai inhibitor.
<hr>ABSTRACT
Chitinase enzyme is an effective tool for chitin degradation and can be used in fishery waste management, biocontrol of phytopathogenic fungi, biopesticide, and single cell protein production. A research on the characterization of crude chitinase from Trichoderma amazonicum LP3 has been investigated using colloidal chitin as substrate. This research aims to investigate the production and characterization of crude chitinase from T. amazonicum LP3. Chitinase activity was assayed using the colorimetric method and the end products of the reaction were analyzed by the Reissig method.

The highest activity of chitinase (8,22 U/mL) was observed after 2 days incubation. Characterization of crude chitinase showed optimum activity at pH 5, temperature 50°C, stable for 3 hours at pH 5 and 1 hour at 50°C. The activities were increased when treated by Ca2+, Co2+, Fe2+, Mg2+, Zn2+, and EDTA 1 mM, whereas activities were inhibited when treated by Hg2+ dan Cu2+.