

INTISARI

AKTIVITAS KITINASE *Streptomyces* sp. ISOLAT PB-2 DALAM MEDIUM KITIN YANG DITAMBAHKAN DENGAN BERBAGAI SUMBER NITROGEN

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Penelitian ini bertujuan untuk mengetahui pengaruh penambahan sumber nitrogen yaitu pepton, *yeast extract*, ammonium sulfat, dan ammonium klorida ke dalam medium kitin cair terhadap aktivitas kitinase *Streptomyces* sp. PB-2. Pengujian dilakukan pada suhu 30°C dan pH 7 selama 7 hari masa inkubasi. Parameter yang diuji meliputi aktivitas kitinase (U/ml) dan konsentrasi N-asetilglukosamin (NAG) (mg/ml). Hasil penelitian menunjukkan bahwa penambahan sumber nitrogen organik maupun anorganik secara signifikan ($p < 0,05$) menurunkan aktivitas kitinase *Streptomyces* sp. PB-2 pada hari ke-1 sampai ke-5 inkubasi. Namun demikian pada hari ke-7 aktivitas kitinase pada perlakuan penambahan *ammonium chloride* cenderung meningkat dan menunjukkan hasil yang lebih tinggi dibandingkan control, dengan nilai sebesar 0,0021 U/ml. Penelitian ini menunjukkan bahwa penambahan sumber nitrogen berupa pepton, *yeast extract*, ammonium sulfat, dan ammonium klorida pada medium kitin cair tidak meningkatkan aktivitas kitinase *Streptomyces* sp. PB-2 hingga hari ke-5 inkubasi.

Kata kunci : Aktivitas kitinase, ammonium klorida, ammonium sulfat, *Streptomyces* sp. PB-2, *yeast extract*

ABSTRACT

CHITINASE ACTIVITY OF *Streptomyces* sp. PB-2 IN THE CHITIN MEDIUM
SUPPLEMENTED BY VARIOUS NITROGEN SOURCES

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This study aimed to determine the effect of supplementing various nitrogen sources peptone, yeast extract, ammonium sulfate, ammonium chloride, into chitin broth medium on the chitinase activity of *Streptomyces* sp. PB-2. The examination was carried out at 30°C and pH 7 during 7 days incubation period, which is the optimum growth condition of *Streptomyces* sp. PB-2. Parameters examined included chitinase activity (U/mL) and concentration of N-acetylglucosamine (NAG) (mg/mL). The result showed that the supplementation of chitin broth with organic nitrogen and inorganic nitrogen significantly ($p < 0,05$) reduced the chitinase activity of *Streptomyces* sp. PB-2 at the incubation period of day-1 to day-5. However at day-7 incubation, the trend of increasing in chitinase activity was observed for the treatment of *ammonium chloride* supplementation with the value of 0.0021 U/mL. This research showed that the supplementation of chitin broth medium with *peptone*, *yeast extract*, *ammonium sulfate*, and *ammonium chloride* did not increase chitinase activity of *Streptomyces* sp. PB-2 until 5 day incubation.

Keywords : Ammonium chloride, ammonium sulphate, chitinase activity, *Streptomyces* sp. isolat PB-2, yeast extract