PENGARUH KONSENTRASI NaCl TERHADAP AKTIVITAS SPESIFIK PROTEASE EKSTRASELULER DARI BAKTERI HALOFILIK HASIL ISOLASI *BITTERN* TAMBAK GARAM MADURA

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Abstrak

Protease halofil dapat dimanfaatkan pada proses fermentasi makanan seperti pada pembuatan kecap ikan. Penelitian ini bertujuan untuk memperoleh bakteri halofilik dari isolat bittern tambak garam Madura dan mengisolasi protease halofil ekstraseluler serta menentukan pengaruh konsentrasi NaCl terhadap aktivitas spesifik protease halofil. Bakteri halofilik ditumbuhkan pada media HSB (Halophlie Synthetic Broth). Penentuan aktivitas protease dilakukan dengan menggunakan substrat azokasein dan kadar protein diukur dengan menggunakan metode Lowry. Berdasarkan penelitian diperoleh bakteri halofilik isolat bittern tambak garam Madura yang tumbuh optimal pada konsentrasi NaCl 4 %(b/v), dengan aktivitas spesifik protease halofil ekstraseluler tertinggi pada fraksi 4 (60-80 %) sebesar 58,537 Unit/mg protein. Adanya penambahan garam NaCl akan meningkatkan aktivitas protease halofil. Pada penelitian ini, aktivitas spesifik protease halofil meningkat menjadi 113,78 Unit/mg protein dengan konsentrasi optimal NaCl 0,750 M.

Kata kunci : Bakteri halofilik, protease ekstraseluler, azokasein, kecap ikan

THE EFFECT OF NACL CONSENTRATION TOWARDS THE EXTRACELLULAR PROTEASE SPECIFIC ACTIVITY OF HALOPHILE BACTERIA ISOLATED FROM BITTERN MADURA SALT MINE

Abstract

Halophile protease can be utilized on food fermentation, such as on the manufacturing fish sauce. The objectives of this study are to obtain halophilic bacteria from bittern isolate of Madura salt embankment, to isolate extra cellular halophilic protease and to determine the influence of NaCl concentration on the specific activity of halophilic protease. Adaptations of halophilic bacteria in HSB medium (Halophile Synthetic Broth). Protease activity measurement was done using azocasein substrat, and protein concentration was measured with lowry method From the study, halophilic bacteria from the bittern isolate of Madura salt embankment were obtained. The bacteria grew optimally on NaCl concentration of 4% (w/v) with highest specific activity of extra cellular halophilic protease of 58.537 unit/mg of protein measured on the fraction 4 (60-80%). Furthermore, it was also observed that NaCl addition could increase the enzyme's specific activity to be 113.78 unit/mg of protein with the optimum NaCl concentration of 0.750 M.

Keywords : Halophilic bacteria, exstraceluler protease, azocasein, fish sauce