Seleksi dan pengujian aktivitas enzim L-Histidine decarboxylase dari bakteri pembentuk histamin

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Abstrak

Enam isolat bekteri pembentuk histamin telah ditapis untuk melihat kemampuannya menghasilkan histamin pada medium Niven termodifikasi. Hasil penapisan menunjukkan ke enam isolat mampu menghasilkan histamin dengan ditandai terjadinya perubahan warna merah jambu/pink pada medium. Produksi histamin ke enam isolat pada medium Niven cair diukur menggunakan metoda Hardy & Smith. Hasil uji menunjukkan ke enam isolat menghasilkan histamin pada medium cair sebanyak 92,35 - 305,49 mg/100 ml medium. Dari enam isolat tersebut, Enterobacter spp. menghasilkan aktivitas tertinggi (305,49 mg/100 ml). Medium sintetik digunakan untuk mempelajari pola pertumbuhan dan waktu optimum produksi enzim HDC pada Enterobacter spp and Morganella morganii (kontrol). Hasilnya menunjukkan bahwa untuk kedua jenis bakteri tersebut, jam ke 8 merupakan waktu optimum untuk memproduksi enzim.
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Selection and test of L-histidine decarboxylase enzyme activity of six isolates of histamine forming bacteria. Six isolates of histamine forming bacteria were screened to see the degree of ability in producing histamine on modified Niven?s medium. The result showed that the six bacteria were able to produce histamine by giving a pinkish color on the medium, which could be used as a preliminary identification of histamine-forming bacteria (HFB). The isolates were grown in liquid modified Niven medium to measure the production of histamine. The histamine produced were determined by Hardy and Smith method. The result showed that all of the isolates produced high level of histamine (92.35 - 305.49 mg/100 ml of the medium). From all of them, Enterobacter spp. produced the highest level of histamine (305.49 mg/100 ml). A synthetic medium was used to measure the growth pattern and optimum time required by Enterobacter spp and Morganella morganii (as control bacteria) to produce the L-histidine decarboxylase enzyme (HDC) which is responsible for histamine production. The result showed that for both bacteria, the optimum enzim production was 8 hours after incubation.