Pengaruh variasi konsentrasi molase terhadap kemampuan aspergillus flavus UICC 360 dalam menghasilkan lovastatin = The effect of concentration variation of molasses on the ability of aspergillus flavus UICC 360 to produce lovastatin

Esti Riani, author

Abstrak

ABSTRAK
Telah dilakukan penelitian untuk mengetahui pengaruh variasi konsentrasi molase terhadap kemampuan Aspergillus flavus UICC 360 dalam menghasilkan lovastatin. Proses fermentasi dilakukan dalam medium Czapek?s Dox Broth (CDB) modifikasi dengan perlakuan variasi konsentrasi molase (0 g/L, 55 g/L, 60 g/L, 65 g/L, 70 g/L, 75 g/L, 80 g/L, dan 85 g/L) selama 7 hari pada suhu ruang (27--30˚C) dengan kecepatan agitasi 90 rpm. Ekstraksi senyawa lovastatin dilakukan dengan pelarut etil asetat. Pengujian ekstrak lovastatin dilakukan dengan metode difusi agar cara cakram terhadap Candida albicans UICC Y-29. Hasil penelitian menunjukkan bahwa nilai rata-rata indeks penghambatan tertinggi sebesar 0,49 ± 0,07 diperoleh dari ekstrak lovastatin dengan perlakuan molase 70 g/L. Analisis uji Least Significant Difference (LSD) (P < 0,05) menunjukkan bahwa terdapat pengaruh nyata perlakuan konsentrasi molase terhadap kemampuan A. flavus UICC 360 dalam menghasilkan lovastatin. Analisis kualitatif dan kuantitatif lovastatin dengan Kromatografi Cair Kinerja Tinggi (KCKT) menunjukkan keberadaan senyawa lovastatin pada perlakuan molase 70 g/L dengan waktu retensi sama dengan lovastatin standar, yaitu 4,5 menit dengan kadar 1,1 mg/L.
<hr>
ABSTRACT
This research was carried out to determine the effect of concentration variation of molasses on the ability of Aspergillus flavus UICC 360 to produce lovastatin. The fermentation process was carried out using Czapek's Dox Broth (CDB) containing variation of molasses concentrations (0 g /L, 55 g /L, 60 g/L, 65 g/L, 70 g/L, 75 g/L, 80 g/L, and 85 g/L) for 7 days at room temperature (27--30˚C) with agitation speed of 90 rpm. Extraction of lovastatin was done with ethyl acetate solvent. Lovastatin extracts were tested using agar disc diffusion method against Candida albicans UICC Y-29. The result revealed that the highest inhibition index of 0.49 ± 0.07 was obtained from lovastatin extracts-treated molasses 70 g/L. Analysis using Least Significant Difference (LSD) (P < 0.05) indicated that there was significant difference on the ability of A. flavus UICC 360 to produce lovastatin at different molasses concentration. Qualitative and quantitative analysis of lovastatin using High Performance Liquid Chromatography (HPLC) proved that

lovastatin was present at 70 g/L molasses with the same retention time to lovastatin standard, which was 4.5 minutes, at concentration of 1.1 mg/L.