Pengaruh variasi konsentrasi urea terhadap kemampuan Aspergillus Flavus UICC 360 dalam menghasilkan Lovastatin = The effect of variation urea concentration on the ability of Aspergillus Flavus UICC 360 in produce Lovastatin

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Abstrak

[Aspergillus flavus UICC 360 merupakan fungi yang mampu menghasilkan senyawa metabolit sekunder berupa lovastatin. Penelitian bertujuan untuk mengetahui pengaruh variasi konsentrasi urea terhadap kemampuan Aspergillus flavus UICC 360 dalam menghasilkan lovastatin. Proses fermentasi menggunakan konsentrasi inokulum Aspergillus flavus UICC 360 sebesar 1,96% (v/v) dalam medium Czapek?s Dox Broth (CDB) modifikasi dengan variasi konsentrasi urea (0
mM, 33 mM, 42 mM, 50 mM, 58 mM, dan 67 mM) dan inkubasi selama 7 hari pada suhu ruang (27--300C) dengan kecepatan agitasi 90 rpm. Ekstrak hasil fermentasi dalam etil asetat diuji terhadap Candida albicans UICC Y-29 menggunakan metode difusi agar cara cakram. Ekstrak hasil fermentasi dari konsentrasi urea 42 mM mempunyai indeks penghambatan rata-rata tertinggi sebesar 0,54 ± 0,15. Hasil Kromatografi Lapis Tipis (KLT) menunjukkan bahwa nilai Rf ekstrak hasil fermentasi dari konsentrasi urea 42 mM sama dengan lovastatin standar, yaitu 0,42 yang mengindikasikan ekstrak mengandung
lovastatin. Uji Least Significant Difference (LSD) (P < 0,05) menunjukkan
terdapat perbedaan nyata variasi konsentrasi urea terhadap kemampuan Aspergillus flavus UICC 360 dalam menghasilkan lovastatin. Hal tersebut menunjukkan bahwa pemberian variasi konsentrasi urea berpengaruh terhadap kemampuan Aspergillus flavus UICC 360 dalam menghasilkan lovastatin.;Aspergillus flavus UICC 360 is capable of producing secondary metabolites such as lovastatin. The study aims to determine the effect of variations of urea concentration on the ability of Aspergillus flavus UICC 360 to produce lovastatin. The fermentation process using 1.96% (v/v) inoculum concentration of Aspergillus flavus UICC 360 in the Czapek?s Dox Broth (CDB) medium modified with urea concentration variations (0 mM, 33 mM, 42 mM, 50 mM, 58 mM, and 67 mM) and incubated for 7 days at room temperature (27--30 °C) with agitation speed of 90 rpm. Ethyl acetate extracts were tested against Candida
albicans UICC Y-29 using agar disc diffusion method. The extract
from fermentation medium of 42 mM urea has the highest average of inhibition index of 0.54 ± 0.15. Results of Thin Layer Chromatography (TLC) showed that the extract from fermentation medium of 42 mM urea has the same Rf value with lovastatin standard Rf 0.42 which indicated that the extract contained lovastatin. Least Significant Difference (LSD) test showed that there were significant difference in the urea concentration variation in the ability of Aspergillus flavus UICC 360 to produce lovastatin. It shows that variation of urea concentrations affect the ability of Aspergillus flavus UICC 360 to produce lovastatin., Aspergillus flavus UICC 360 is capable of producing secondary metabolites such as lovastatin. The study aims to determine the effect of variations of urea concentration on the ability of Aspergillus flavus UICC 360 to produce lovastatin. The fermentation process using 1.96% (v/v) inoculum concentration of Aspergillus flavus UICC 360 in the Czapek’s Dox Broth (CDB) medium modified with urea concentration variations (0 mM, 33 mM, 42 mM, 50 mM, 58 mM, and 67 mM) and incubated for 7 days at room

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