Pengaruh konsentrasi natrium nitrat terhadap kemampuan anti-candida albicans dari aspergillus flavus UICC 360 = Effect of sodium nitrate concentration on aspergillus flavus UICC 360 in producing anti-candida albicans

Eka Desi Lestari, author

Abstrak

Aspergillus flavus UICC 360 telah diketahui dapat menghasilkan senyawa anti-Candida albicans. Penelitian bertujuan untuk mengetahui pengaruh konsentrasi natrium nitrat terhadap kemampuan anti-C. albicans dari Aspergillus flavus UICC 360. Sebanyak (2,8--3,7) x 107 CFU/ml inokulum Aspergillus flavus UICC 360 dengan konsentrasi 1,96% (v/v), diinokulasikan ke dalam medium Czapek?s Dox Broth yang berisi variasi konsentrasi natrium nitrat (0 mM, 23 mM, 29 mM, 35 mM, 41 mM, dan 47 mM).
Fermentasi dilakukan selama 7 hari pada suhu ruang (27--30° C). Pengujian kemampuan anti-C. albicans dilakukan dengan menggunakan metode difusi agar cara cakram. Kemampuan anti-C. albicans ditunjukkan oleh terbentuknya zona hambat. Uji perbandingan berganda Least Significancy Difference (LSD) (P < 0,05) memperlihatkan adanya pengaruh nyata pemberian variasi konsentrasi natrium nitrat terhadap ukuran diameter zona hambat.
Hasil penelitian menunjukkan NaNO3 29 mM (ekstrak E3 dalam etil asetat) merupakan konsentrasi terbaik untuk aktivitas anti-C. albicans, ditandai dengan diameter zona hambat, yaitu 8,70 ± 0,53 mm (setara dengan nistatin pada konsentrasi 1.581,8 ppm).
.....Aspergillus flavus UICC 360 has been known to produce anti-Candida albicans compound. The research aims to determine the effect of sodium nitrate concentration on Aspergillus flavus UICC 360 in producing anti-C. albicans. Inoculum of (2.8--3.7) x 107 CFU/ml of Aspergillus flavus UICC 360 in 1.96% (v/v) concentration was inoculated into Czapek's Dox Broth medium containing various sodium nitrate concentration (0 mM, 23 mM, 29 mM, 35 mM, 41 mM, and 47 mM).
The fermentation was carried out for 7 days at 27--30° C. Investigation of anti-C. albicans test was carried out by disc agar diffusion method. Anti-C. albicans from Aspergillus flavus UICC 360 was shown by the formation of inhibitory zones. Least Significancy Difference test (P < 0.05) showed significant effect of the varying sodium nitrate concentration on inhibitory zone diameter.
The result showed that highest anti-C. albicans was shown by highest inhibition zone diameter at 8.70 ± 0.53 (equivalent to the activity of nystatin at concentration of 1,581.8 ppm) which was achieved at 29 mM NaNO3 (extract of E3 in ethyl acetate).