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تباين نمو كانديدا البيكانز في بيئات مختلفة

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Abstract : Variation in Growth of Candida albicans in Different Media. Presented by Hisham Abdullah Badahman. Bachelor in Biological sciences 1420H from King Abdul-Aziz University, Jeddah. Candida albicans yeast is one of the commensal fungus of humans. It colonizes the mucosal surfaces of the oral-pharyngeal, gastrointestinal, and urogenital tracts. Candida albicans can behave as pathogenic microbe and can cause significant morbidity as well as life-threatening disease in immunocompromised individuals .A major underlying factor for C.albicans virulence is the ability to switch between budding and hyphal or pseudohyphal states and its responses to the environmental changes in the growth media. Temperature and pH are the most environmental factors effective on C.albicans. In this study three liquid media were tested for their ability to promote the growth and filamentation of C.albicans strains, which were isolated from King Abdul-Aziz university hospital. The effect of temperature and pH on the germ tube and pseudohyphae formation in the tested media was compared with the results of horse serum and RPMI 1640 media. This study showed that the number of total cells for all strains increased by the time during the experimental period in all tested media, but the high percentage of germ tube formation (G %) and the time at which it reached its maximum % was different for each medium and strain. The study showed that modified sabouraud broth (MSB) medium was the best medium to stimulate C.albicans to form the highest percentage of germ tube formation (100%) after 1.5h at 37 °C and pH 7.4, which the same as G % formed by horse serum medium (the most effective inducer of hyphae). It was related to the low of glucose concentration in MSB medium (0.2 %) compared with the other two media (Lee's and Winge). The study also showed that all tested strains did not form high G % on RPMI1640 medium or any pseudohyphal formation on horse serum medium. The variations in the colony morphology (phenotypic switching), was studied of C.albicans strains on the solid tested media, which reflected the ability of strain to be virulence. The study showed that the variations in the colony phenotype or morphology is related to the component of the media as in (horse serum and RPMI1640 solid media), anaerobic conditions as in (the presence of 7 %CO₂) for all tested strains on blood and chocolate agar and the strain variations, as will as, its genetic properties, as in (strain 10231 on Lee's medium in the presence of (7 % CO₂) and strains W3 and K1 on blood agar and chocolate agar respectively, both in the absence of 7 % CO₂).

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