

## Abstract

### Effect of Media and Estrogen on Morphological Change in *Candida albicans*

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#### **Introduction:**

*Candida albicans* (*C. albicans*), an opportunistic pathogen, lives symbiotically within the intestine of its human host. Temperature and chemical factors have been shown to induce a morphological change in *C. albicans* from yeast to filamentous form turning *C. albicans* pathogenic. In this study, we investigated the intestinal cues that might be responsible for the change. We found that different solid media impact the morphological phenotype so we focused on characterizing these before further testing. We tested Estradiol (E2) because of its known linkage to sepsis and higher levels during infections. Experiments were conducted to compare solid agar plates of YEPD, Minimal Media (MM), and Spider Media (SP) for *C. albicans* growth to choose the best one for further testing with E2 and other factors that could be prone to causing morphological changes.

#### **Methods:**

*C. albicans* was inoculated through streak method on different solid media (YEPD, MM, SP) and incubated at 30°C. The effect of 0.1nM E2 on *C. albicans* morphology was also tested. Morphological changes were assayed through bright-field microscopy.

#### **Results:**

Using the three different medias, we found three distinctive phenotypes: A, B, and C. Out of 6 experiments of 14 MM plates, the expressed phenotype was 86% A and 14% inconclusive of the time. 8 experiments of 17 SP plates showed 100% of phenotype B. 6 experiments of 14 YEPD plates presented phenotype C 92% of the time and 8% inconclusive. For E2 trials, 2 experiments, 6 MM plates showed 50% phenotype A and 50% inconclusive. 4 experiments, 10 SP plates had phenotype B 100%. YEPD 2 experiments, 2 plates had phenotype C at 100%.

#### **Conclusion:**

We have established experimental conditions of media controls for further testing whether E2 and other cues, such as inflammatory cytokines, have inhibitory or positive effects on the growth of *C. albicans*.