

OP 2

Influence of culture medium on in-vitro biofilm formation by *Candida* species

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Objectives: Objective of this study was to establish an in vitro biofilm on the 96 well plates and to determine the efficacy of three different culture media on biofilm formation of *Candida albicans* and *C. tropicalis*

Methods: A 96 well sterile, polystyrene plate was inoculated using 10⁶ cell/ml of *C. albicans* and *C. tropicalis* suspensions and the growth rate of planktonic cells was determined by measuring the absorbance (OD₄₉₂) at 2 hour intervals. Adhesion of Candidial cells to initiate the biofilm formation in the presence of three culture media (Yeast Nitrogen Base (YNB) supplemented with 100 mM glucose, Sabouraud Dextrose Broth (SDB) and RPMI1640) was quantified using MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) and Crystal Violet (CV) assay after 90 minutes. Biofilms of *C. albicans*, *C. tropicalis* and 1:1 co-biofilms were developed and the growth rates were quantified at 24 hours' time intervals. Scanning electron microscope (SEM) was performed to assess the architecture.

Results: Planktonic cells of both *C. albicans* and *C. tropicalis* showed maximum growth with SDB. *C. albicans* and co-biofilm adhesion were significantly facilitated with RPMI1640 and the best medium for *C. tropicalis* adhesion was YNB. Biofilms showed the maximum growth rate in RPMI 1640. *C. tropicalis* exhibited the minimum growth with all three culture media.

Conclusions: The maximum growth rate for planktonic *C. albicans* and *C. tropicalis* was achieved with SDB. However RPMI 1640 was the best medium for growth of biofilms.