



Effect of Inoculum Size and Culture Age on the Cellular Properties and Host-Pathogen Interactions of *Cryptococcus neoformans*

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Authors' contributions

This work was carried out in collaboration between all authors. Authors PVCY and KKC designed the experiments. Author KKC performed all experiments and analysis, interpreted data, and wrote the manuscript. Author PVCY supervised development of work, assisted in data interpretation, manuscript preparation, and acted as corresponding author. Authors PPC and ASHH supervised development of work and assisted in manuscript evaluation. All authors read and approved the final manuscript.

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ABSTRACT

Aims: *Cryptococcus neoformans* is a fungal pathogen which infection caused devastating morbidity and mortality in immunocompromised patients. The present study investigated the effect of culture starting inoculum size and culture age towards cellular properties of *C. neoformans* and its interactions with mammalian host alveolar epithelial cells.

Methodology: *C. neoformans* H99 was cultured at different starting inoculum sizes and collected at varied culture ages to examine the morphology of the yeast cells and agar invasion property. The interaction with host alveolar epithelial cells was assessed *in vitro* using A549 cells as the host cell model.

Results: Visual observation demonstrated that cryptococci cultured with higher starting inoculum sizes and longer incubation periods displayed flocculation properties, aberrant morphologies with

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