Introduction

- Candida albicans is widespread yeast.
- The infections can be short lived, superficial skin irritations to devastating, fatal systemic diseases.
- The contamination of viruses in fungi, commonly called Mycoviruses or VLPs.
- Their possible effects on the level of toxins and metabolites produced by fungi enhanced their significance in environmental health research.
- Viruses of higher fungi were first suspected in 1950 when Sinden and Hauser reported a degenerative disease of mushroom.
- The isometric mycoviruses are classified into four families including Tolviridae (Tolvivirus), Partilitiviidae (Partilivirus), Chrysorviidae (Chrysovirus) and Reoviridae (Mycoreovirus).
- Candida albicans is a popularly known fungal organism that can cause several fungal infections in humans.
- Candida colonizes the mucosal surfaces of all humans soon after birth and the risk of endogenous infection is ever present.
- C. albicans continues to be important commensal and a constituent of the normal gut flora comprising microorganisms that live in the mouth and gastrointestinal tract.
- C. albicans lives in 80% of the human population without causing harmful effects, although overgrowth of the fungus results in candidiasis.
- Lisa H. Amir et al., (2013) suggested that the CASTLE (Candida and Staphylococcus Transmission: Longitudinal Evaluation) study will investigate the micro-organisms involved in the development of mastitis and "breast thrush" among breastfeeding women.

Methods

- Harvest and Disruption of mycelial mats
- Centrifugation and Identification through TEM
- Elimination of VLPs from cycloheximide treatment
- Extraction of nucleic acids and purification of dsRNA by cellulose CF11 chromatography
- Extraction and characterization of proteins by SDS PAGE

Results & Discussion

The objective of the proposed work is to be examined:
1) Screening and indexing of Candida albicans for the presence of virus like particles.
2) Identification of VLPs through transmission electron microscopy.
3) Elimination of VLPs from Candida albicans.
4) Purification and characterization of VLPs from Candida albicans through: Clarification Concentration Extraction Ascertaining nature of nucleic acid 5) Extraction and purification of protein.

Conclusions

1. Absorption spectra of crude extracts confirmed the nucleic protein nature of VLP in Candida albicans.
2. Through TEM and CF11 chromatography, confirmed the nature of virus of Candida albicans.
3. It is evidenced that nature of nucleic acid is dsRNA and 10 kb molecular weight.
4. Viral protein sample extracted from nucleoprotein extract is found to be 42 kDa.
5. Occurrence of virus in Candida albicans was found to be the first report from India.
6. Presence of virus in this important human pathogenic fungus can be a matter of interest.

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References