

Yeast Identification

Dr.Alyaa Sabti

Introduction

- Yeasts are considered **normal flora of oropharynx and gastrointestinal tract** and may therefore be recovered from sputum, throat swabs, bronchial washings, gastric washings, and stool specimens.
- However, the **repeated isolation of yeasts** from a series of clinical specimens of **urine, nail scrapings, and vaginal washings**, from the same patient usually indicates infection with the organism recovered and identification of the isolates is necessary.

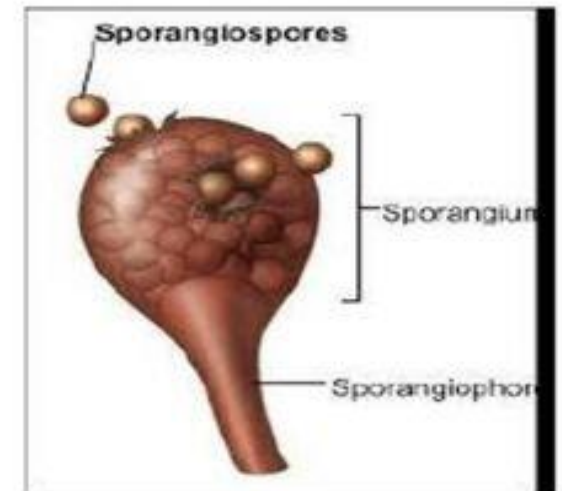
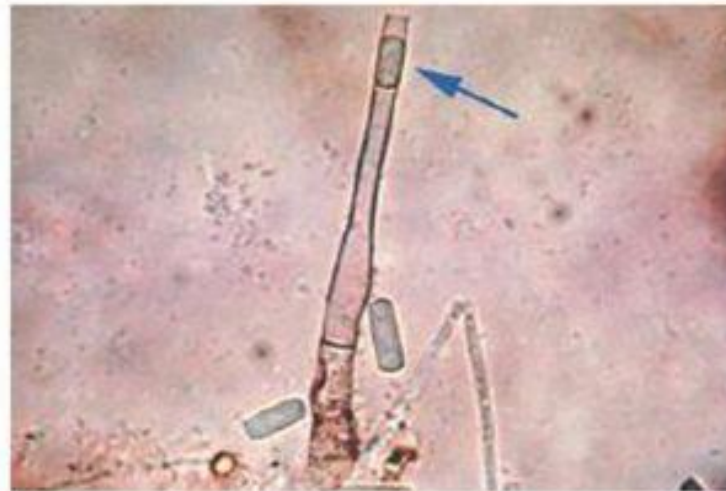
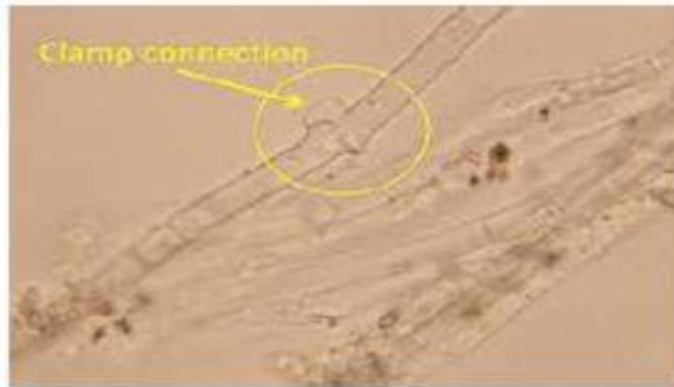
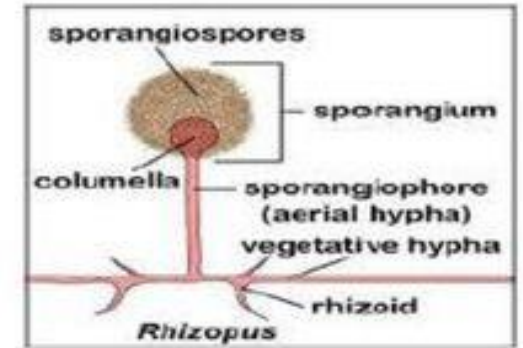
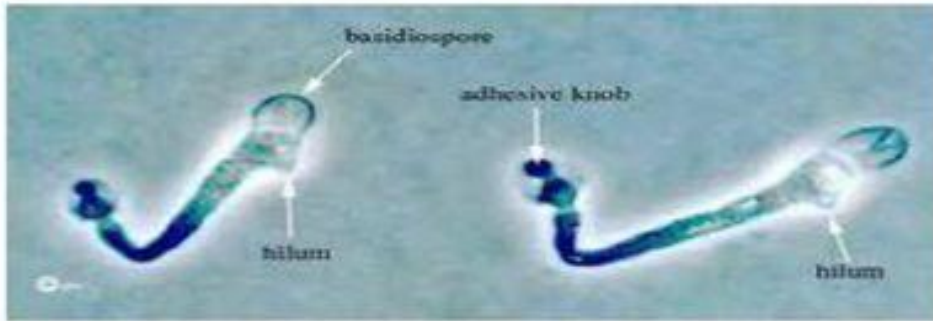
- Furthermore, the presence of yeast in normally sterile body fluids such as blood, cerebrospinal fluid (CSF), or fluids aspirated from the pleural cavity, or the pericardial sac, is also considered as a clinical situation in which species identification is justified.

- Candida albicans* is the species of yeast most frequently cultured from clinical specimens.



Principal Criteria and Tests for Identifying Yeasts

1. **Culture characteristics** - Colony color, shape, texture.
2. **Asexual structures.**
 - a. Shape and size of cells.
 - b. Bipolar, fission, multipolar or unipolar "budding".
 - c. Absence or presence of arthroconidia, ballistoconidia, blastoconidia, clamp connections, germ tubes, hyphae, pseudohyphae, or sporangia and sporgangiospores.

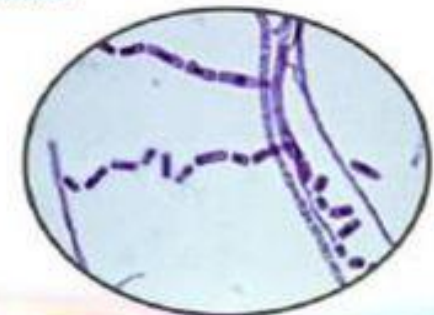
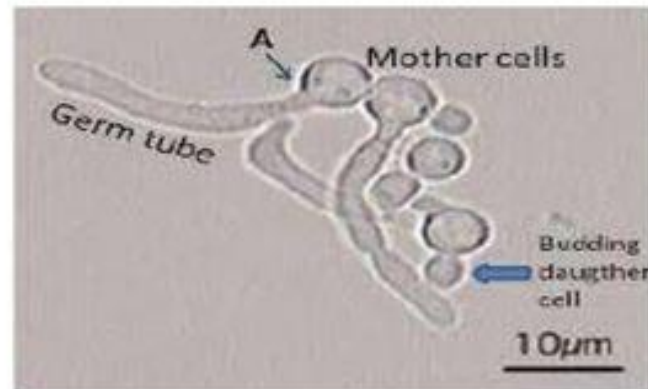


MAYO CLINIC
Mayo Medical Laboratories

Arthroconidia



Fern Sporangia



Principal Criteria and Tests for Identifying Yeasts

3. **Sexual structures** - Arrangement, cell wall ornamentation, number, shape and size of ascospores or basidiospores.

4. **Physiological studies**

Assimilation, Cycloheximide resistance, Fermentation, Nitrogen utilization, Urea hydrolysis, Temperature studies, Citrate utilization test.

Microscopic examination of yeasts

Yeasts are examined by microscope by one of these methods :

1-Gram stain .

2-Direct/ Wet mount .

3-Germ tube test .

4-India ink test .

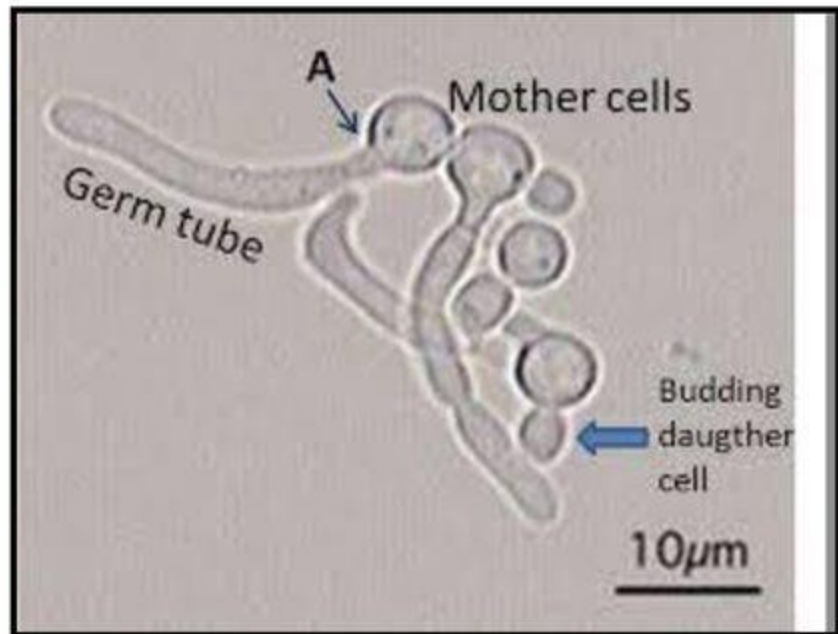
5- Lactophenol Mount.

6- Production of chlamydospores on CMA-Tween 80: Corn Meal Agar with Tween[®] 80.

7- Carbohydrate fermentation.

Germ tube test

1. Suspend a very small portion of an isolated colony of the yeast to be tested in a test tube containing 0.5 ml of rabbit or human serum.
2. Incubate the test tube at 37 °C for no longer than 3 hours.
3. Place a drop of the yeast-serum suspension on a microscope slide, and cover with a coverslip.
4. Examine under the microscope for the presence of germ tube.



The End