INTENDED USE

BD Rice Extract Agar is used for differentiating Candida albicans from other Candida spp. based on chlamydospore formation.

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

Rice Extract Agar was first described by Taschdjian. Chlamydospores were observed consistently and in abundance on this medium 17-24 hours after inoculation with Candida albicans. In later studies, it was shown that the addition of polysorbate 80 to Rice Extract Agar enhanced chlamydospore formation by C. albicans. Taubert and Smith recommended Rice Extract Agar for use in the diagnosis of vulvovaginal candidiasis.

The medium supplemented with polysorbate 80 is the formulation of BD Rice Extract Agar. It is a medium for differentiation and must not be used for the isolation of Candida species directly from clinical specimens but is used with pure cultures only. After inoculation, a cover glass was applied to the agar, covering most of the inoculum.

In BD Rice Extract Agar, rice extract provides the sole source of nutrients. This lack of nutrients together with the oxygen-deficient culture conditions (covering the inoculum with coverslips) creates a deficient environment that induces the formation of specific morphological forms (chlamydospores and pseudomycelia in particular). The addition of polysorbate 80 further stimulates chlamydospore formation due to its content of oleic acids.

REAGENTS

**BD Rice Extract Agar**

<table>
<thead>
<tr>
<th>Formula* Per Liter Purified Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Rice, Extract from (solids)</td>
</tr>
<tr>
<td>Polysorbate 80</td>
</tr>
<tr>
<td>Agar</td>
</tr>
</tbody>
</table>

pH 6.6 +/- 0.2

*Adjusted and/or supplemented as required to meet performance criteria.

PRECAUTIONS

For professional use only.

Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

Consult **GENERAL INSTRUCTIONS FOR USE** document for aseptic handling procedures, biohazards, and disposal of used product.

STORAGE AND SHELF LIFE

On receipt, store plates in the dark at 2 to 8°C, in their original sleeve wrapping until just prior to use. Avoid freezing and overheating. The plates may be inoculated up to the expiration date (see package label) and incubated for the recommended incubation times.

Plates from opened stacks of 10 plates can be used for one week when stored in a clean area at 2 to 8°C.

USER QUALITY CONTROL

Inoculate the plates with the strains mentioned in the Table below by cutting slits into the surface of the agar with an inoculating wire or needle. Cover the inoculated area with sterile coverslips. Incubate at 23-28°C or at room temperature for 18-48 hours. Examine for chlamydospores.
microscopically using approximately 100x magnification and by focusing upon the line of inoculation.

<table>
<thead>
<tr>
<th>Stains</th>
<th>BD Rice Extract Agar</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Candida albicans</em> ATCC™ 10231</td>
<td>Growth with chlamydospores</td>
</tr>
<tr>
<td><em>Candida krusei</em> ATCC 34135</td>
<td>Growth without chlamydospores</td>
</tr>
<tr>
<td>Uninoculated</td>
<td>Watery, with gray to very light amber hue, opaque</td>
</tr>
</tbody>
</table>

**PROCEDURE**

**Materials Provided**

BD Rice Extract Agar (90 mm Stacker™ plates). Microbiologically controlled.

**Materials Not Provided**

Ancillary culture media, reagents and laboratory equipment as required.

**Specimen Types**

BD Rice Extract Agar is a medium for differentiation and must not be used for the isolation of *Candida* species directly from clinical specimens (see also PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE).

**Test Procedure**

An isolated colony is picked from the isolation plate containing yeast colonies, e.g., from BD Sabouraud Glucose Agar or from another isolation medium for fungi and is streaked onto BD Rice Extract Agar by cutting slits into the surface of the agar with an inoculating loop or wire. Then, cover the inoculated area with sterile coverslips. Incubate at 23-28°C or at room temperature for 18 to 48 hours.

**Results**

After 18 to 48 hours incubation, examine for chlamydospores microscopically using approximately 100x magnification and by focusing upon the line of inoculation. Most strains of *C. albicans* including "*C. stellatoidea*" will have formed typical chlamydospores. Consult the references for evaluation of the test. 4-7

**PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**

BD Rice Extract Agar is used for the detection of chlamydospores in the differentiation of *Candida albicans* and "*Candida stellatoidea*" from other yeast species. 6 The medium must not be used for the isolation of *Candida* species or other fungi directly from the clinical specimen. Polysorbate 80 enhances chlamydospore production of *Candida albicans* and "*Candida stellatoidea*"; however, it also enhances chlamydospore formation in other *Candida* species.

*Candida dubliniensis* is also germ tube positive an produces chlamydospores. 8 Yeasts other than *Candida* species might produce a pseudomycelium. It is recommended to use biochemical identification for all strains that do not produce germ tubes and for strains neither producing germ tubes nor pseudomycelium or for ambiguous results. Therefore, and since morphological criteria are not sufficient for the identification of these and other species, further tests must be performed for a complete identification. 8 BD CHROMagar™ *Candida* is recommended for both the selective isolation of fungi and for the identification of the common *Candida* species. High incubation temperatures must be avoided since chlamydospores are not formed at 37°C. BD Rice Extract Agar is a minimal medium. Therefore, growth on this medium is rather poor as compared to fungal isolation media.

**REFERENCES**


PACKAGING/AVAILABILITY
BD Rice Extract Agar
Cat. No. 254420  Ready-to-use Plated Media, cpu 20

FURTHER INFORMATION
For further information please contact your local BD representative.

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