



Corn Meal Agar

M146

Intended use

Recommended for chlamyospore production by *Candida albicans* and the maintenance of fungal stock cultures.

Composition**

Ingredients	Gms / Litre
Corn meal, infusion from	50.000
Agar	15.000
Final pH (at 25°C)	6.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 17 grams in 1000 ml purified/ distilled water. Heat to boiling to dissolve the medium completely. If desired add 1% polysorbate 80. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Chlamyospore production is an accepted criterion for the identification of *Candida* species. Corn Meal Agar is a well-established mycological medium used for the cultivation of fungi and to study chlamyospores production of *Candida* species (6). Corn Meal Agar is a general purpose medium used for the cultivation of fungi and for the study of *Candida* species for chlamyospore production. Pollack and Benham (6) have described the usefulness of this medium for studying the morphology of *Candida*. Walker and Huppert (8) modified this medium by adding polysorbate 80, which then stimulated faster and plenty of chlamyospore formation of *Candida* species.

This is a very simple formulation containing only cornmeal infusion and agar. However this infusion has enough nutrients to enhance the growth of fungi. Polysorbate 80 is a mixture of oleic esters, which activates the production of chlamyospore by *Candida albicans*, *Candida stellatoidea* and *Candida tropicalis* (3). Some *Candida* species lose their ability of chlamyospore formation by repeated sub culturing.

Pick a suspected colony from Sabouraud Dextrose Agar (M063) using a straight wire, and make a deep cut in the Corn Meal Agar plate. Repeat for each colony. Place a flamed sterile coverslip over the line of inoculum. After incubation for 24-48 hours at 25-30°C, the streaks are examined microscopically, through the coverslip, using low and high power objectives.

C.albicans produces mycelium bearing ball-like clusters of budding cells and characteristics thick walled round chlamyospores (2).

Type of specimen

Food and dairy samples.

Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (7,8).

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical tests must be carried out for confirmation.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow coarse free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured, opalescent gel forms in Petri plates

Reaction

Reaction of 1.7% w/v aqueous solution at 25°C. pH : 6.0±0.2

pH

5.80-6.20

Cultural Response

Cultural characteristics observed after an incubation at 23-27°C for upto 4 days.

Organism	Inoculum (CFU)	Growth	Chlamyospores	Recovery
<i>Aspergillus brasiliensis</i> ATCC 16404 (00057*)	50-100	luxuriant	negative	
<i>Candida albicans</i> ATCC 10231 (00054*)	50-100	luxuriant	positive	≥70%
<i>Saccharomyces cerevisiae</i> ATCC 9763 (00058*)	50-100	luxuriant	negative	≥70%
<i>Saccharomyces uvarum</i> ATCC 28098	50-100	luxuriant	negative	≥70%

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,4).

Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Conant N. F., Smith D. T., Baker R. D., Callaway J. L. and Martin D. S., 1971, Manual of Clinical Mycology, 3rd Ed., USA
3. Cooper and Silvo-Hunter, 1985, Manual of Clinical Microbiology, Lennette, Balows, Hausler and Shadomy (Eds.), 4th ed., ASM, Washington, D.C.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
6. Pollack and Benham, 1960, J. Lab. Clin. Med., 50:313.
7. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
8. Walker and Huppert, 1960, Tech. Bull. Reg. Med. Technol., 30:10.

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