Czapek Yeast Autolysate Agar (CYA Agar)

M2061

Intended Use

Recommended for the isolation and cultivation of heat resistant filamentous fungi (molds) from foods.

Composition**

Ingredients	Gms / Litre
Sucrose	30.000
Yeast extract	5.000
Sodium nitrate	3.000
Dipotassium hydrogen phosphate	1.000
Potassium chloride	0.500
Magnesium sulphate,heptahydrate	0.500
Ferrous sulphate, heptahydrate	0.010
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 54.75 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates. If low pH is desired, acidify the media upto 3.0 -4.0 by the addition of 10% Lactic acid Solution (FD095).

Principle And Interpretation

Czapek Yeast Autolysate Agar supports the growth of organisms which are able to utilize sodium nitrate as the sole source of nitrogen. It is also used for the cultivation and maintenance of numerous fungal species and also for chlamydospore production by *Candida albicans* (1). The medium has been recommended by various authors for studies of *Aspergillus, Penicillium and Actinomycetes* (2, 3, 4, 5).

Sodium nitrate is the sole source of nitrogen while sucrose is the sole source of carbon. Magnesium glycerophosphate and potassium sulphate help in chlamydospore production by *C.albicans*. Chlamydospore production can be observed by spreading the inoculum between the agar and the Petri plate.

Type of specimen

Food samples

Specimen Collection and Handling:

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (6).

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. This medium is recommended for enumeration of aerobic endospore formers.
2. 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
White to light yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium
Light yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 5.48% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
M2061: Cultural characteristics observed after an incubation at different temperatures for 24 -48 hours.

Organism	Growth	Incubation temperature
Aspergillus fumigatus ATCC 1028	luxuriant	50°C
# Aspergillus brasiliensis ATCC 16404 (00053*)	luxuriant	30°C
Candida albicans ATCC 10231 (00054*)	luxuriant (Chlamydospores formation)	28°C
Pencillium notatum ATCC 10108	luxuriant	20 - 25°C
Saccharomyces cerevisiae ATCC 9763 (00058)*	luxuriant	25 - 30°C

Key :# - Formerly known as *Aspergillus niger,* * - Corresponding WDCM numbers

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 inorder 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8).

Reference

1. Dawson and Christine O., 1962, Saboutaudia; 1:214.
2. Thom C. and Church M.B., 1926, The Aspergilli, Williams and Wilkins Co., Baltimore.
3. Thom C., 1930, The Penicillia, Williams and Wilkins Co., Baltimore.
4. Raper K.B. and Thom C., 1949, Manual of Penicillia, Williams and Wilkins Co., Baltimore.
5. Wakesman S.A., 1931, Principles of Soil Microbiology, Bailliere Thindall and Co., London.
6. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

7. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
8. 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.

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