Czapek Malt Agar

M732

Intended Use:

Recommended for isolation, detection and cultivation of saprophytic fungi.

Composition**

Ingredients	Gms / Litre
Malt extract	40.000
Sucrose	30.000
Sodium nitrate	2.000
Potassium chloride	0.500
Magnesium sulphate	0.500
Ferrous sulphate	0.010
Dipotassium hydrogen phosphate	1.000
Agar	20.000
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 94.01 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. 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

Saprophytic fungi are the largest group of fungi, which grow on dead organic matter such as fallen trees, cow patties, dead leaves, and even dead insects and animals. These fungi have enzymes that work to "rot" or "digest" the cellulose and lignin found in the organic matter, with the lignin being an important source of carbon for many organisms. *Penicillium*, commonly known as "bread mould", is a saprophytic fungus that has various industrial applications both in food and environment.

Czapek Malt Agar is used for isolation, detection and cultivation of saprophytic fungi, yeasts and moulds, mainly for *Penicillium* (1).

This medium contains sodium nitrate as the sole source of nitrogen. Sucrose and malt extract serves as the carbohydrate sources for the growing fungi. Various salts in the medium not only buffer the medium but also provide essential ions to the fungi. Slightly acidic pH of the medium favours the growth of saprophytic fungi.

Type of specimen

Organic matter samples.

Specimen Collection and Handling:

For organic matter samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(1) 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 and serological tests must be carried out for further identification.

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 homogeneous free flowing powder

Gelling
Firm, comparable with 2.0% Agar gel

Colour and Clarity of preparred mediun
Medium amber coloured, slightly opalescent gel forms in Petri plates

Reaction
Reaction of 9.4% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH
6.60-7.00

Cultural Response
Cultural characteristics observed after an incubation at 25-30°C for 48-72 hours

Organism	Inoculum (CFU)	Growth	Recovery
# Aspergillus brasiliensis ATCC 16404 (00053*)	50-100	good-luxuriant	
Candida albicans ATCC 10231 (00054*)	50-100	good-luxuriant	>=70%
Saccharomyces cerevisiae ATCC 9763 (00058*)	50-100	good-luxuriant	>=70%
Pencillium notatum ATCC 10108	50-100	luxuriant	

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

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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. Booth C., (Ed.), 1971, Methods in Microbiology by Norris J.R. and Ribbons, D.W., Vol. 4, Academic Press, London.

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

3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015)3 Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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