



Czapek Dox Broth

M076

Intended use

Recommended for the general cultivation of fungi from water samples.

Composition**

| Ingredients | Gms / Litre |
|-----------------------|-------------|
| Sucrose | 30.000 |
| Sodium nitrate | 3.000 |
| Dipotassium phosphate | 1.000 |
| Magnesium sulphate | 0.500 |
| Potassium chloride | 0.500 |
| Ferrous sulphate | 0.010 |
| Final pH (at 25°C) | 7.3±0.2 |

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35.01 grams in 1000 ml purified/ distilled water. Heat if necessary to dissolve the medium completely. Mix well and dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Fungi, including yeasts and filamentous species or moulds are ubiquitously distributed in nature. Czapek Dox Broth is a semi-synthetic medium used for the cultivation of fungi, containing sodium nitrate as the sole source of nitrogen. This medium is prepared according to the formula developed by Thom and Church (1), which has a defined chemical composition. Czapek Dox Broth is the modification of the original medium of Czapek Dox (2, 3) as per Thomas and Raper (7).

Sucrose serves as the sole source of carbon while sodium nitrate serves as the sole source of nitrogen. Dipotassium phosphate buffers the medium. Magnesium sulphate, potassium chloride, ferrous sulphate serves as sources of essential ions.

Type of specimen

Water samples.

Specimen Collection and Handling:

For water 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.This medium is general purpose medium and may not support the growth of fastidious organisms.

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

Colour and Clarity of prepared medium

Light yellow coloured, clear to slightly opalescent solution in tubes

Reaction

Reaction of 3.5% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

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

| Organism | Inoculum (CFU) | Growth |
|---|----------------|----------------|
| <i>Aspergillus brasiliensis</i> ATCC 16404 | 50-100 | good-luxuriant |
| <i>Candida albicans</i> ATCC 10231 (00054*) | 50-100 | good-luxuriant |
| <i>Saccharomyces cerevisiae</i> ATCC 9763 | 50-100 | good-luxuriant |

Key : * - Formerly known as *Aspergillus niger*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°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 (4,5).

Reference

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Czapek, 1920-1903, Bcitr. Chem. Physiol. Pathol., 1:540
3. Dox, 1910, U.S. Dept. of Agr. Bur. Anim. Ind. Bull., 120:70
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. Thom and Church, 1926, The Aspergilli, 39.
7. Thom and Raper, 1945, Manual of Aspergilli, 39.

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Disclaimer :

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