Czapek-Dox Modified Agar

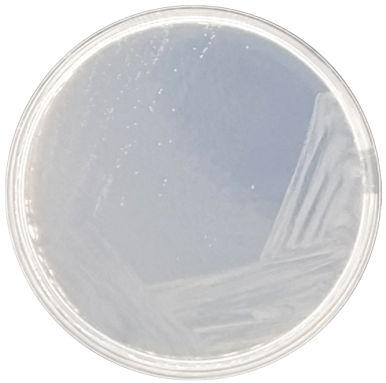
Cat. 1015

For the cultivation of fungi and bacteria using sodium nitrate as a sole source of nitrogen.

Practical information

Aplications	Categories
Enrichment	Mesophilic aerobic
Enrichment	Yeasts and molds

Industry: General cultivation / Antimicrobial susceptibility testing



Principles and uses

Czapek-Dox Modified Agar is commonly used for the cultivation of fungi and chlamydospore formation by C. albicans. For the cultivation of acidophilic organisms, such as yeasts, the acidity of the medium may be increased. It is also used for taxonomic studies of Aspergillus, Penicillium and Actinomycetes.

Czapek-Dox Modified Agar is a semi-synthetic medium which contains sodium nitrate as a sole source of nitrogen. It has the advantage of a chemically defined formulation, which has been modified in its original formula by substituting magnesium sulfate and potassium phosphate with the magnesium glycerophosphate in this formula to prevent the precipitation of magnesium phosphate. The medium is prepared with inorganic nitrogen sources and chemically defined carbon sources only.

Sucrose is the sole fermentable carbohydrate providing carbon and energy. Sodium nitrate is the sole nitrogen source. Potassium salts act as a buffer system. Potassium chloride contains essential ions. Magnesium glycerophosphate and ferrous sulfate are sources of cations. Bacteriological agar is the solidifying agent.

Formula in g/L

Bacteriological agar	12	Ferrous sulfate	0,01
Potassium chloride	0,5	Potassium sulfate	0,35
Sucrose	30	Sodium Nitrate	2
Magnesium glycerophosphate	0,5		

Preparation

Suspend 45,4 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. Cool to 45-50 ºC, mix well and dispense into plates.

Instructions for use

- Inoculate with a straight needle, taking the precaution to invert the plates in order to protect the medium surface from airborne spores.
- Time and temperature of incubation vary considerably according to the fungi. As a general rule, incubate for 1-2 weeks at room temperature (approximately 25 °C). Most Penicillium grow best between 20 - 25 °C; Aspergillus species grow well at around 30 °C, but Aspergillus fumigatus grows well at 50 °C and C. albicans at 25 °C during 24 - 48 hours.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)

Uniform flocculent precipitate	Fine powder	Clear beige	Amber, slightly opalescent	6,8 ± 0,2

Microbiological test

Incubation conditions: (30±2 ºC / 18-48 h, up to 72 h)

Microorganisms	Specification
Candida albicans ATCC 10231	Good growth
Aspergillus brasiliensis ATCC 16404	Good growth
Staphylococcus aureus ATCC 25923	Moderate growth
Bacillus subtilis ATCC 6633	Moderate growth
Saccharomyces cerevisiae ATCC 9763	Good growth

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Thom and Raper. Manual of Aspergilli. Williams and Wilkins Co., Baltimore, MD 1945.
Smith G. An Introduction to Industrial Mycology 5th Ed. Arnold LR London, 1960.