Czapek-Dok Modified Broth

Cat. 1250

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

Principles and uses

Czapek-Dok Modified Broth is commonly used for the cultivation of fungi and Candida albicans.
It is similar to Czapek-Dox Modified Agar (Cat. 1015), without the agar, and is used to grow bacteria and fungi which are capable of using Sodium nitrate as a sole source of nitrogen.

Czapek-Dox Modified Broth is a semi-synthetic medium containing 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 to prevent the precipitation of Magnesium phosphate. The medium is elaborated with inorganic sources of nitrogen and chemically defined sources of carbon only. It is useful in a variety of microbiological procedures, including soil microbiology, and fungi and mold resistance tests. This medium will yield moderately good growth of most saprophytic Aspergilli.

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.

Formula in g/L

Ferrous sulfate	0,01	Potassium chloride	0,5
Sucrose	30	Sodium Nitrate	3
Magnesium glycerophosphate	0,5	Dipotassium sulfate	1

Preparation

Suspend 35 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. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes.

Instructions for use

Times and temperatures of incubation vary considerably according to the fungi. As a general rule, incubate from 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)
May present a slight precipitate	Fine powder	Clear beige	Colorless	6,8 ± 0,2

Microbiological test

Incubation conditions: (30±2 ºC / 1-5 days)

Microrganisms	Specification

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

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

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