Burks Medium

M707

Intended Use:

Recommended for isolation and cultivation of nitrogen fixing bacteria such as *Azotobacter* species.

Composition**

Ingredients	Gms / Litre
Magnesium sulphate	0.200
Dipotassium hydrogen phosphate	0.800
Potassium dihydrogen phosphate	0.200
Calcium sulphate	0.130
Iron (III) Chloride	0.00145
Sodium molybdate	0.000253
Sucrose	20.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 21.3 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Principle And Interpretation

Nitrogen fixing organisms are free-living bacteria, which grow well on a nitrogen free medium. These bacteria utilize atmospheric nitrogen gas for their cell protein synthesis. This cell protein is then mineralised in soil after the death of the cells, thereby contributing towards the nitrogen availability of the crop plants. Burks medium is recommended for detection of nitrogen fixing organisms such as *Azotobacter* species from soil (3).

This medium contains inorganic salts along with carbohydrate source but lacks nitrogen source. Nitrogen fixing bacteria are able to fix atmospheric nitrogen and grow when cultured on this nitrogen-free medium.

Type of specimen

Soil samples.

Specimen Collection and Handling

For soil samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (3). 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. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.

2.Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.

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 cream homogeneous free flowing powder

Colour and Clarity of prepared medium

Colourless clear solution over a white precipitate.

Cultural Response

Cultural characteristics after an incubation at 30°C for 7 days.

Organism	Growth
Azotobacter beijerinckii ATCC 12981	good-luxuriant
Azotobacter nigricans ATCC 35009	good-luxuriant

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. 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 (1,2).

Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. 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.
3. Subba Rao N. S. 1977, In: Soil Microorganisms and Plant Growth, Oxford & IBH Publishing Co., New Delhi, Pages 254-255.

Revision : 02/2020