Beijerinckia Medium

M708

Intended Use:

Recommended for isolation of *Beijerinckia.*

Composition**

Ingredients	Gms / Litre
Potassium dihydrogen phosphate	0.800
Sucrose	20.000
Dipotassium hydrogen phosphate	0.200
Magnesium sulphate	0.500
Ferric chloride	0.100
Sodium molybdate	0.005
Agar	15.000
Final pH (at 25°C)	6.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 36.6 grams in 1000 ml 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

Beijerinckia characterizes its members as non-symbiotic, aerobic chemoheterotrophic bacteria with the ability to fix atmospheric nitrogen (2). The free living bacteria having the ability to fix molecular nitrogen can be distinguished into obligate aerobic facultative aerobic and anaerobic organisms. *Beijerinckia* is an obligate aerobic bacterium. Beijerinckia Medium is used for the isolation of *Beijerinckia* species (1). Though members of this species utilize a wide range of multicarbon compounds, sugars are the preferred growth substrates.

Sucrose is the energy source, phosphates serve as buffers and magnesium sulphate, ferric chloride and sodium molybdate act as trace elements.

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 (5). 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. Some species may show poor growth due to nutritional variations.

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

Gelling

Firm,comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Colourless clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 3.66% w/v aqueous solution at 25°C. pH : 6.5±0.2

pH
6.30-6.70

Cultural Response
Cultural characteristics observed after an incubation at 20-30°C for 18-48 hours.

Organism	Growth
Beijerinckia indica ATCC 21423	luxuriant
Beijerinckia mobilus	luxuriant

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. 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 (3,4).

Reference

1. Becking J.H, 1959, PC soil, 11 193 - 206.
2. Duorkir M. et al (Ed.), 1999, 3rd Ed. N.Y.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. 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.
5. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.

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