

Technical Information

Ashbys Mannitol Agar

Product Code: DM 1706

Application: - Ashbys Mannitol Agar is used for cultivation of *Azotobacter* species that can use mannitol and atmospheric nitrogen as source of carbon and nitrogen respectively.

Composition**

Ingredients	Gms / Litre
Mannitol	20.000
Dipotassium phosphate	0.200
Magnesium sulphate	0.200
Sodium chloride	0.200
Potassium sulphate	0.100
Calcium carbonate	5.000
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Azotobacter is a genus of free-living diazotrophic bacteria which has the higher metabolic rate compared to any other microorganisms. *Azotobacters* are chemoorganotrophic, using sugars, alcohols and salts of organic acids for growth. *Azotobacters* can non-symbiotically fix atmospheric nitrogen aerobically due to their unique mode of metabolism. Besides the ability to fix atmospheric nitrogen, *Azotobacter* also synthesize biologically active substances, which helps in improving seed germination, plant growth etc.

Ashbys Agar Media are formulated as described by Subba Rao ⁽¹⁾. It is used for isolation of *Azotobacter*, a non-symbiotic nitrogen fixing bacteria which uses mannitol as a carbon source and atmospheric nitrogen as nitrogen source. Dipotassium phosphate provides buffering to the medium. Various essential ions required for promoting growth of *Azotobacter* are also available in this medium.

Methodology

Suspend 40.7 grams of powder media in 1000 ml distilled water. Shake well and heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Note: Due to presence of calcium carbonate, the prepared medium forms opalescent solution with white precipitate.

Quality Control

Physical Appearance

White to cream homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Whitish opalescent gel forms in Petri plates

Reaction

Reaction of 4.07% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH range 7.20-7.60



Dehydrated Culture Media
Bases / Media Supplements

Cultural Response/Characteristics

DM1706: Cultural characteristics observed after an incubation at 35-37°C for upto 5 days.

Organism	Growth
<i>Azotobacter nigri cans ATCC 35009</i>	good-luxuriant
<i>Azotobacter vinelandii ATCC 478</i>	good-luxuriant

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. Subba Rao, 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., India.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
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