



## Ashbys Mannitol Agar

M706

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

### Directions

Suspend 40.7 grams in 1000 ml distilled water. Heat just to boiling . 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 .*

### Principle And Interpretation

*Azotobacter* is a genus of free-living diazotrophic bacteria which have the highest 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 attributes to 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

### Quality Control

#### 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

7.20-7.60

#### Cultural Response

M706: Cultural characteristics observed after an incubation at 35-37°C for upto 5 days.

#### Organism

#### Growth

*Azotobacter nigricans* ATCC good-luxuriant  
35009

*Azotobacter vinelandii*      good-luxuriant  
ATCC 478

### Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

### Reference

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

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### Disclaimer :

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