



Technical Data

MYP Agar Base (Phenol Red Egg Yolk Polymyxin Agar Base) M636S

MYP Agar Base with added supplements is used for isolation and identification of pathogenic Staphylococci and *Bacillus* species. It is recommended by BIS committee under the specifications IS:5887(Part V)-1976.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Meat extract	1.000
D-Mannitol	10.000
Sodium chloride	10.000
Phenol red	0.025
Agar	15.000
Final pH (at 25°C)	7.2±0.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 46.03 grams in 900 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 55°C. Aseptically add sterile Polymyxin B Sulphate (FD003) solution to a final concentration of 100 units per ml and 100 ml sterile Egg Yolk Emulsion (FD045) per 1000 ml medium. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Mannitol Yolk Polymyxin (MYP) Agar was formulated by Mossel et al (1) and is recommended by APHA (2) for enumeration of *Bacillus cereus*. When present in large numbers in certain foodstuffs, *Bacillus cereus* can produce metabolites responsible for the clinical symptoms of food poisoning (3). MYP Agar Base is recommended by BIS for isolation and enumeration of *Bacillus cereus*. (4).

The medium contains peptic digest of animal tissue and meat extract which provide nitrogen source. Mannitol fermentation can be detected with the phenol red, which yields yellow colour to the mannitol fermenting colonies. Added egg yolk emulsion helps in differentiation of lecithinase producing colonies which are surrounded by a zone of white precipitate. Addition of Polymyxin B Sulphate helps to restrict growth of gram-negative bacteria such as *Escherichia coli* and *Pseudomonas aeruginosa*. These differentiating media allow differentiation of *Bacillus cereus* from other *Bacillus* species by its inability to ferment mannitol and poor sporulation. Acid produced by organisms other than *Bacillus cereus* often diffuse through the medium, making it difficult to distinguish between mannitol fermenters and nonfermenters. So it is advised to transfer the suspected colonies to a fresh medium to ascertain the true reaction.

Colonies from MYP Agar are subcultured on Nutrient Agar and incubated at 30°C for 24 hours to observe/determine vegetative cells, sporangium and spore morphology and lipid globules within vegetative cell.

Quality Control

Appearance

Light yellow to light pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Basal medium :Red coloured clear to slightly opalescent gel. After Addition of Egg Yolk Emulsion (FD045) : Light orange coloured opaque gel forms in Petri plates

Reaction

Reaction of 4.6% w/v aqueous solution at 25°C. pH : 7.2±0.1

pH

7.10-7.30

Cultural Response

M636S: Cultural characteristics observed with added Egg Yolk Emulsion (FD045) and Polymyxin B Sulphate (FD003) after an incubation at 32°C for 18-40 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	Lecithinase activity
<i>Bacillus cereus</i> ATCC 10876	50-100	luxuriant	>=50%	red	positive, opaque zone around the colony
<i>Bacillus subtilis</i> ATCC 6633	50-100	luxuriant	>=50%	yellow	negative
<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	<=10%		
<i>Proteus mirabilis</i> ATCC 25933	50-100	luxuriant	>=50%	red	negative
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	none-poor	<=10%		
<i>Staphylococcus aureus</i> ATCC 25923	50-100	luxuriant	>=50%	yellow	positive, opaque zone around the colony

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. Mossel D.A.A., Koopman M.J. and Jongerium E., 1967, Appl. Microbiol, 15:650.
2. Vanderzant C. and Splittstoesser D. (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd ed., APHA, Washington, D.C.
3. Nygren B., 1962, Acta Path. Microbiol. Scand., 56 : Suppl. 1.
4. Bureau of Indian Standards, IS : 5887, (Part IV) 1976.

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