Technical Information

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

Product Code: DM 1636S

Application: - MYP Agar Base with added supplements is recommended 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

Principle & 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 used by BIS for isolation and enumeration of *Bacillus cereus*. (4).

The medium contains peptic digest of animal tissue and meat extract which supply 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.

Methodology

Suspend 46.03 grams of dehydrated media in 900 ml distilled water. Mix thoroughly & 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 (MS 2003) solution to a final concentration of 100 units per ml and 100 ml sterile Egg Yolk Emulsion (MS 2045) per 1000 ml medium. Shake well before pour into sterile Petri plates.

Quality Control

Appearance
Light yellow to light pink homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel.

Colour and Clarity
Basal medium: Red coloured clear to slightly opalescent gel. After Addition of Egg Yolk Emulsion (MS 2045): 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 Range
7.10-7.30

Cultural Response
DM 1636S: Cultural characteristics observed with added Egg Yolk Emulsion (MS 2045) and Polymyxin B Sulphate (MS 2003) after an incubation at 32°C for 18-40 hours.

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

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Mossel D.A.A., Koopman M.J. and Jongerium E., 1967, Appl. Microbiol, 15:650.
2. Vanderzant C. and Splittstoessr 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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