



PRODUCT SPECIFICATION SHEET

MYP Agar Base (Phenol Red Egg Yolk Polymyxin Agar Base) (DM687)

Intended Use

MYP Agar Base (Phenol Red Egg Yolk Polymyxin Agar Base) (DM687) is recommended for isolation and identification of pathogenic *Staphylococci* and *Bacillus* species.

Product Summary and Explanation

Mannitol Yolk Polymyxin (MYP) Agar was formulated by Mossel et al⁽¹⁾ and is recommended by APHA⁽²⁾ for isolation and enumeration of *Bacillus cereus* from foods. This medium differentiates *B. cereus* from other bacteria based on its resistance to polymyxin, lack of mannitol fermentation and presence of lecithinase.^(3,4) *B. cereus* is commonly found in nature, on vegetables and in some processed foods.⁽⁵⁾ When present in large numbers in certain foodstuffs, *Bacillus cereus* can produce metabolites responsible for the clinical symptoms of food poisoning.⁽⁶⁾ MYP Agar Base is recommended by BIS for isolation and enumeration of *Bacillus cereus*.⁽⁷⁾ Outbreaks of foodborne illness have been associated with boiled and cooked rice, cooked meats and cooked vegetables.⁽⁸⁾ MYP Agar is a recommended medium for testing foods.^(5,8,9)

Principles of the Procedure

MYP Agar contains peptic digest of animal tissue and meat extract as sources of carbon, nitrogen, vitamins and minerals. D-Mannitol is the carbohydrate source. Phenol red is the pH indicator. Sodium chloride helps to maintain the osmotic balance of the medium. Mannitol fermentation can be detected with the phenol red, which yields yellow colour to the mannitol fermenting colonies. Egg Yolk Enrichment 50% provides lecithin. 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. *B. cereus* is typically mannitol-negative (pink-red colonies) and lecithinase-positive (zone of precipitate around the colonies). 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.

Formula / Liter

Ingredients	Gms / Liter
Peptic digest of animal tissue	10.00
Meat extract	1.00
D-Mannitol	10.00
Sodium chloride	10.00
Phenol red	0.025
Agar	15.00
Final pH: 7.1 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 46 grams of the medium in 900 ml of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclaving at 121°C, 15 lbs pressure for 15 minutes. Cool to 55°C.





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- Aseptically add sterile Polymyxin B Sulphate (MS002) solution to a final concentration of 100 units per ml and 100 ml sterile Egg Yolk Emulsion (MS038) per 1000 ml medium.
- Mix well and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	Light yellow to light pink homogeneous free flowing powder
Prepared Medium	Basal medium : Red coloured clear to slightly opalescent gel After Addition of Egg Yolk Emulsion (MS038) : Light orange coloured opaque gel forms in Petri plates
Reaction of 4.6% solution	pH 7.1 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Expected Cultural Response: Cultural characteristics observed with added Egg Yolk Emulsion (MS038) and Polymyxin B Sulphate (MS002) after an incubation at 32°C for 18-40 hours.

Sr. No.	Organisms	Results to be achieved				
		Inoculum (CFU)	Growth	Recovery	Color of colony	Lecithinase activity
1.	<i>Bacillus cereus</i> ATCC 10876	50-100	good-luxuriant	≥50%	red	positive, opaque zone around the colony
2.	<i>Bacillus subtilis</i> ATCC 6633	50-100	good-luxuriant	≥50%	yellow	negative
3.	<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	≤10%	--	--
4.	<i>Proteus mirabilis</i> ATCC 25933	50-100	good-luxuriant	≥50%	red	negative
5.	<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	none-poor	≤10%	--	--
6.	<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant	≥50%	yellow	positive, opaque zone around the colony

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to appropriate references for standard test procedures. 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.

Results

Bacteria that ferment mannitol produce acid products and form colonies that are yellow. Bacteria that produce lecithinase hydrolyze the lecithin and a zone of white precipitate forms around the colonies. Refer to appropriate references and standard test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.





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Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : MYP Agar Base (Phenol Red Egg Yolk Polymyxin Agar Base)

Product Code : DM687

Available Pack sizes : 100gm / 500gm

References

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9. Horwitz (ed.). 2007. Official methods of analysis of AOAC International, 18th ed., online. AOAC International, Gaithersburg, Md.

Further Information

For further information please contact your local MICROMASTER Representative.



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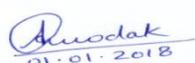
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