

## Modified MYP Agar Plate

MP1139

### Intended Use:

Recommended for isolation and identification of *Bacillus* species and pathogenic Staphylococci.

### Composition\*\*

Ingredients	g / L
Peptone	10.000
HM extract#	1.000
D-Mannitol	10.000
Sodium chloride	10.000
Phenol red	0.025
Agar	12.000
Final pH ( at 25°C)	7.1±0.2

\*\*Formula adjusted, standardized to suit performance parameters

# Equivalent to Meat extract

### PolyB Selective Supplement (FD003)

Polymyxin B sulphate	5.95 mg
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### Egg Yolk Emulsion (FD045)

Egg yolk	30ml
Sterile saline	70ml

### Directions

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

### Principle And Interpretation

*Bacillus cereus* is ubiquitously present in soil, vegetation water and dust. It has been isolated from a large variety of foods, including vegetables, meat, cereals, pasteurized fresh milk and powdered milk (1,2,3) and processed foods. Under favourable conditions, the organism multiplies and causes gastrointestinal illness (3). It is implicated in two different forms of food poisoning; an emetic illness and a diarrhoeal illness. The emetic illness is mediated by a highly stable toxin that survives high temperature, exposure to trypsin, pepsin and pH extremes. The diarrhoeal illness is mediated by a heat and acid labile enterotoxin.

Lecithinase activity is the key reaction in the differential identification of *B.cereus*, the most commonly encountered and important species in clinical laboratories, from the majority of the other *Bacillus* species. If unknown isolate produces lecithinase, *Bacillus cereus* can be presumptively identified by also observing colonial morphology, hemolytic reactivity and motility tests. When present in large numbers in certain foodstuffs, *B.cereus* can produce metabolites responsible for the clinical symptoms of food poisoning (4). This medium differentiates *B.cereus* from other bacteria based on the basis of lecithinase activity, mannitol fermentation and resistance to polymyxin (FD003). Modified MYP Agar has similar composition to MYP Agar except agar concentration.

Modified MYP Agar Base contains peptone and HM extract, which provide nitrogen and carbon source, long chain amino acids, vitamins and other essential growth nutrients. Mannitol fermentation can be detected by phenol red, which yields yellow colour to the mannitol fermenting colonies due to acid production. 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 (FD003) helps to restrict growth of gram-negative bacteria such as *Escherichia coli* and *Pseudomonas aeruginosa*. These differentiating media allow differentiation of *B.cereus* from other *Bacillus* species by its inability to ferment mannitol and poor sporulation. *B.cereus* dissimilates egg yolk and gives rise to typical bacilli form colonies with reddish zones and white halos. Acid produced by organisms other than *B.cereus* often diffuse through the medium, making it difficult to distinguish between mannitol fermenters and non-fermenters. So it is advised to transfer the suspected colonies to a fresh medium to visualize the true reaction.

Colonies from Modified MYP Agar Base 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.

## Type of specimen

Clinical samples - Faeces; Food samples; Water samples

## Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (7).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (8).

After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions

In Vitro diagnostic Use. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations

1. If unknown isolate produces lecithinase, *Bacillus cereus* can be presumptively identified by also observing colonial morphology, hemolytic reactivity and motility tests.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

Sterile Modified MYP Agar Plate in 90 mm disposable plates with smooth surface and absence of black particles/ cracks/ bubbles.

### Colour of medium

Light orange coloured medium

### Quantity of medium

25ml of medium in 90mm plate

### pH

6.90-7.30

### Cultural Response

Cultural characteristics observed 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 spizizenii</i> ATCC 6633 (00003*)	50-100	luxuriant	≥50%	yellow	negative
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	none-poor	≤10%		Negative
<i>Proteus mirabilis</i> ATCC 25933	50-100	luxuriant	≥50%	red	negative
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	none-poor	≤10%		Negative
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	50-100	luxuriant	≥50%	yellow	positive, opaque zone around the colony

Key : (\*) Corresponding WDCM numbers.

(\*\*) Formerly known as *Bacillus subtilis* subsp. *spizizenii*

## Storage and Shelf Life

On receipt store between 2-8°C Use before expiry date on the label. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

## Reference

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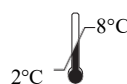
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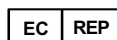
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