



Dehydrated Culture Media
Bases / Media Supplements

Technical Information

MYP Agar Base

Product Code: DM 1636F

Application: - MYP Agar Base is recommended for isolation and identification of *Bacillus cereus* in accordance with FDA BAM.

Composition**

Ingredients	Gms / Litre
HM Peptone B #	1.000
Peptone	10.000
Mannitol	10.000
Sodium chloride	10.000
Phenol red	0.025
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Beef extract

Principle & Interpretation

MYP Agar Base (DM 1636F) is recommended by FDA BAM to isolate and enumerate *B.cereus* from foods (5,4). This medium differentiates *B.cereus* from other bacteria on the basis of lecithinase activity, mannitol fermentation and resistance to polymyxin (MS 2003) (5, 6).

MYP Agar Base is recommended for isolation and identification of *Bacillus cereus* n accordance with FDA BAM (1). *B. cereus* is ubiquitously present in soil, on vegetables, and in many raw and processed foods, meat, cereals, pasteurized fresh milk and powdered milk (2-4) and other processed foods. Under favourable conditions, the organism multiplies and causes gastrointestinal illness (4). 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 colony morphology, hemolytic reactivity and motility tests.

Peptone and HM Peptone B supply nitrogen and carbon source, long chain amino acids, vitamins and other essential nutrients. Mannitol serves as the carbon source that upon fermentation yields yellow colour to the colonies. Egg yolk emulsion aids in the differentiation of lecithinase producing colonies, which are surrounded by a zone of white precipitate. Polymixin B Sulphate acts as the inhibitor to restrict the growth of gram negative bacteria. These properties also help in the differentiation of *B.cereus* from other bacillus species (1).

Methodology

Suspend 23.01 grams of dehydrated media in 450 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 45-50°C. Aseptically add rehydrated contents of 1 vial of sterile Polymyxin B Sulphate (MS 2003) solution to a final concentration of 100 units per ml and 25 ml sterile Egg Yolk Emulsion (MS 2045F). 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 (MS1045) : Light orange coloured opaque gel forms in Petri plates

Reaction

Reaction of 4.6% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH Range

7.00-7.40

Cultural Response

DM 1636F: 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.

Cultural Response

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

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. FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
2. Bergdoll, M. S. 1981. Clin. Microbiol. Newsletter, 3: 85-87.
3. Centers for Disease Control: Bacillus cereus- Maine, MMWR, 35: 408-410, 1986.
4. Donovan, K. O. 1958. J. Appl. Bacteriol., 21.
5. Downes, F.P. and Ito, K. 2001. Methods For The Microbiological Examination of Foods. APHA, Food 4 ed. Washington, D.C.
6. Nygren, B. 1962. Acta Path. Microbiology. Scand, 56(Suppl. 1).



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- User must ensure suitability of the product(s) in their application prior to use.
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