

MYP Agar (i23125)

MYP Agar (Cereus Agar) is used with Egg Yolk Enrichment 50% and Bacillus Cereus Selective Supplement for the enumeration, detection and isolation of *Bacillus cereus* in foodstuffs.

Industry: Food

Principles & Uses

Bacillus cereus, found ubiquitously in soil, water, and dust, poses a concern in food safety. This bacterium has been isolated from various foods, including vegetables, meat, and milk products, and under favorable conditions, it can multiply and cause gastrointestinal illnesses. Two distinct forms of food poisoning are linked to this microbe: an emetic illness and a diarrheal illness. The emetic illness is caused by a heat-resistant toxin, while the diarrheal form results from a heat and acid-labile enterotoxin.

Mossel et al. introduced Mannitol-Egg Yolk-Polymyxin (MYP) Agar, recommended by APHA, to isolate and enumerate *B. cereus* from foods. This medium is a differentiating tool that detects lecithinase production, mannitol fermentation, and resistance to polymyxin. It contains nutrients like peptone and meat extract, allowing nitrogen supply. Mannitol fermentation is indicated by a yellow color change. Egg yolk emulsion aids in distinguishing lecithinase-producing colonies, marked by a white precipitate zone. Polymyxin B Sulphate restricts the growth of gram-negative bacteria. This medium enables differentiation of *B. cereus* from other *Bacillus* species.

Composition (gr/L)

Peptone from Casein 10, Meat Extract 1, D-Mannitol 10, Sodium Chloride 10, Phenol Red 0.025, Agar 12.
Final pH at 25°C 7.2 ± 0.2

Preparation from dehydrated Powder

Suspend 21.5 g of the powder in 450 mL of purified water. Autoclave at 121°C for 15 minutes. Cool to 45-

50°C. Aseptically add 50 mL of egg-yolk emulsion and the contents of 1 vial of Bacillus Cereus Selective Supplement (polymyxin B sulphate 50,000 IU). Pour into plates.

Quality Control

Dehydrated Appearance: Pink, homogeneous, free-flowing.

Prepared Appearance: Red, very slightly to slightly opalescent without significant precipitate.

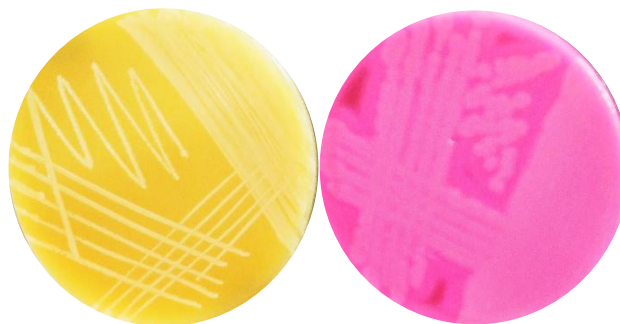
Reaction of 4.6% Solution at 25°C: pH 7.1 ± 0.2

Cultural Response

Cultural response observed after 18-40 hours of incubation at 32 ± 2°C.

Organism (ATCC*)	Recovery	Mannitol fermentation Colony color	Lecithinase reaction
<i>Bacillus cereus</i> (11778)	Good	- / Red	+
<i>Bacillus subtilis</i> (6633)	Good	+ / Yellow	-
<i>Pseudomonas aeruginosa</i> (27853)	Inhibition	- / -	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Bacillus subtilis, which is mannitol-positive, turns the medium yellow but is lecithinase-negative (left). *Bacillus cereus*, which is mannitol-negative but lecithinase-positive, creates a halo around its colonies.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.