

Bacillus cereus Agar Base (Mossel)

Basal medium for the isolation and enumeration of *Bacillus cereus*, according to ISO 7932, ISO 21871 and FDA-BAM.

TYPICAL FORMULA	(g/l)
Enzymatic Digest of Casein	10.0
Meat Extract	1.0
D-Mannitol	10.0
Sodium Chloride	10.0
Phenol Red	0.025
Agar	14.0
Final pH 7.2 ± 0.2	

DESCRIPTION

Bacillus cereus Agar Base is a medium used with supplements for the selective detection of *Bacillus cereus* in food.

The complete medium (MYP) complies with the recommendations of ISO 7932, ISO 21871 and FDA-BAM for the identification of *B. cereus* on the basis of polymyxin resistance, ability to ferment mannitol and production of lecithinase.

Mossel's formulation makes this medium sufficiently selective to detect even small numbers of *Bacillus cereus* cells and spores in the presence of large numbers of other contaminants. Therefore, it is also suitable for the examination of stool specimens.

PRINCIPLE

Enzymatic digest of casein and beef extract provide amino acids, nitrogen, carbon, vitamins and minerals. Mannitol is the fermentable carbohydrate. Sodium chloride maintain the osmotic balance of the medium. Phenol red is the pH indicator. Agar is the solidifying agent.

Egg Yolk Emulsion (ref. 80219) is added to the medium to determine lecithinase activity, whereas *Bacillus cereus* Supplement (ref. 81016) which contains Polymyxin B, is incorporated to confer selectivity.

PREPARATION

Suspend 45 g of powder in 950 milliliter of deionized or distilled water. Bring to boil and shake until completely dissolved. Sterilize at 121°C for 15 minutes. Cool up to 45-50°C. Aseptically, add rehydrated content of 2 vials (10 ml) of *Bacillus cereus* Supplement generating a final concentration of 100,000 units of polymyxin B per liter of medium. Also add 50 ml of Egg Yolk Emulsion. Mix well and pour in Petri dishes.

TECHNIQUE

Inoculate the medium, directly with the sample (if liquid) or its initial suspension by using the spread plate method. Repeat with further decimal dilution. Incubate at 30 ± 1°C for 24 hours under aerobic atmosphere. If colonies are not clearly visible, extend incubation for other 24 hours.

INTERPRETATION OF RESULTS

Bacillus cereus forms large colonies of about 5 mm diameter, pink coloured (mannitol neg.) and typically surrounded by an opaque halo of egg yolk precipitation (lecithinase pos.). Further tests should be performed for purposes of identification.

Note: Other egg yolk reacting organisms such as *Staphylococcus aureus*, *Serratia marcescens* and *Proteus vulgaris*, are able to growth on this medium but are distinguished from *Bacillus cereus* by colony form and colour. In addition, these organisms produce an egg yolk-clearing reaction in contrast to egg yolk precipitate produced by *Bacillus cereus*.

STORAGE

The powder is very hygroscopic, store the powder at 10-30°C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident. Store prepared plates at 2-8°C away from light.

WARNING AND PRECAUTIONS

The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous. It is nevertheless recommended to consult the safety data sheet for its correct use. The product is designed for *in vitro* diagnostic use only and must be used by properly trained operators.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to the national and local regulations in force.

REFERENCES

1. EN ISO 11133:2014. Microbiology of food, animal feed and water – Preparation, production, storage and performance testing of culture media.
2. FDA-BAM Chapter 14 (2012): *Bacillus cereus*.
3. ISO 21871:2006: Microbiology of food and animal feeding stuffs – Horizontal method for the determination of low numbers of presumptive *Bacillus cereus* – Most probable number technique and detection method.
4. ISO 7932:2004: Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of presumptive *Bacillus cereus* – Colony-count technique at 30 °C
5. FDA-BAM Media M95 (1998): Mannitol-Egg Yolk-Polymyxin (MYP) Agar.
6. Mossel, D.A.A., Koopman, M.J. and Jongerius, E. (1967): Enumeration of *Bacillus cereus* in foods. Appl. Microbiol. 15: 650-653.
7. Donovan, K.O. (1958): A selective medium for *Bacillus cereus* in milk. J. Appl. Bacteriol. 21: 100-103.



PRODUCT SPECIFICATIONS

NAME

Bacillus cereus Agar Base (Mossel)

PRESENTATION

Dehydrated medium

STORAGE

10-30°C

PACKAGING

Ref.	Content	Packaging
610114	500 g	500 g of powder in plastic bottle
620114	100 g	100 g of powder in plastic bottle

pH OF THE MEDIUM

7.2 ± 0.2

USE

Bacillus cereus Agar Base is a medium used with supplements for the selective detection of *Bacillus cereus* in food and other materials, according to ISO 7932, ISO 21871 and FDA-BAM

TECHNIQUE

Refer to technical sheet of the product

APPEARANCE OF THE MEDIUM

Powder medium

Appearance: free-flowing, homogeneous

Colour: pinkish-beige

Ready-to-use medium

Appearance: opaque

Colour: pink-orange

SHELF LIFE

4 years

QUALITY CONTROL

- Control of general characteristics, label and print
- Microbiological control
Inoculum for productivity: 50-100 CFU
Inoculum for selectivity: 10⁴-10⁶ CFU
Inoculum for selectivity: 10³-10⁴ CFU
Incubation Conditions: 21-48 h at 30 ± 1°C, in aerobiosis

Microorganism

Bacillus cereus WDCM 00001

Escherichia coli WDCM 00012

Bacillus subtilis WDCM 00003

Growth

Good

Inhibited











Good

Appearance of the colonies

Pink colonies with precipitation halo

Yellow colonies without precipitation halo

TABLE OF SYMBOLS

 Batch code	 <i>In vitro</i> Diagnostic Medical Device	 Manufacturer	 Use by	 Fragile, handle with care
 Catalogue number	 Temperature limitation	 Contains sufficient for <n> tests	 Caution, consult instructions for use	 Do not reuse



LIOFILCHEM® S.r.l.

Via Scozia, Zona Ind.le - 64026, Roseto degli Abruzzi (TE) - ITALY

Tel +39 0858930745 Fax +39 0858930330 Website: www.liofilchem.net E-mail: liofilchem@liofilchem.net

