



Technical Data

Soyabean Casein Digest Medium Base w/o Polymyxin

M011F

Soyabean Casein Digest Medium Base with added Polymyxin is recommended for selective isolation and MPN method of *B.cereus* in accordance with FDA BAM,1998.

Composition**

Ingredients	Gms / Litre
Tryptone #	17.000
Soya peptone ##	3.000
Sodium chloride	5.000
Dextrose	2.500
Dibasic potassium phosphate	2.500
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Pancreatic digest of casein

Papaic digest of soyabean meal

Directions

Suspend 30 grams in 1000 ml purified/ distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Add one vial of sterile Polymyxin B Sulphate (FD003) solution to a final concentration of 100 Units/ml.Mix well and dispense as desired.

Note: If any fibres are observed in the solution, it is recommended to filter the solution through a 0.22 micron filter to eliminate the possibility of presence of fibres.

Principle And Interpretation

Bacillus cereus is a large, $1 \times 3-4 \mu\text{m}$, Gram-positive, rod-shaped, endospore forming, and facultative aerobic bacterium. They are mesophilic and can grow in a wide range of environments and are commonly found in nature, vegetables and in several processed foods. Under favorable circumstances the microorganism grows to sufficient numbers and cause gastrointestinal illness. Outbreaks of food borne illness have been associated with boiled and cooked rice, cooked meat and vegetables (1). The infection mediates diarrhoeal illness that is attributed by a heat and acid labile enterotoxin. Soyabean Casein Digest Medium Base (SCDM) with polymyxin B (FD 003) is recommended for the selective isolation and MPN method of *Bacillus cereus* in accordance with FDA BAM, 1998 (2). *B.cereus* in general is resistant to polymyxin B and the addition of it into the medium helps in the selective isolation of the organism. Without supplement, SCDM is a highly nutritious medium used for cultivation of a wide variety of organisms (3). The combination of tryptone and soya peptone makes the medium nutritious by providing amino acids and long chain peptides for the growth of microorganisms. Dextrose and dibasic potassium phosphate serve as the carbohydrate source and the buffer, respectively in the medium. Sodium chloride maintains the osmotic balance of the medium. FDA BAM suggests two methods to check the presence of *B. cereus* that are 1) Serial dilution method and 2) MPN Method. According to the serial dilution protocol, appropriate dilutions of the suspected samples are made in Butterfield's Phosphate Buffered Dilution Water (R094) and spread plate was done with 0.1 ml of respective dilutions in MYP Agar Base (M636F). According to the MPN method, 1 ml each of 10⁻¹, 10⁻² and 10⁻³ are inoculated into Soyabean Casein Digest Medium Base (M011F) with polymyxin (FD003) incubate for $48 \pm 2 \text{ h}$ at $30 \pm 2^\circ\text{C}$. Observation of turbid growth after the incubation time is indicative of the presence of *B. cereus*. Positive cultures are further inoculated into MYP Agar Base (M636F) and incubated 18-24 h at 30°C. *B.cereus* appears as pink coloured colonies surrounded by a precipitate zone of lecithinase activity. Biochemical tests are performed to confirm the species.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Please refer disclaimer Overleaf.

Colour and Clarity of prepared medium

Light yellow coloured clear solution without any precipitate.

Reaction

pH of 3.0% w/v aqueous solution at 25°C (after sterilization). pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed after an incubation at 30-35°C by adding Polymyxin B Selective Supplement(FD003).

Cultural Response

Organism	Inoculum (CFU)	Growth
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Cultural Response

<i>Bacillus cereus</i> ATCC 10876	50-100	luxuriant
<i>Escherichia coli</i>	>=10 ³	inhibited
ATCC 25922		

Storage and Shelf Life

Store below 30°C in a tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1., Hoffmaster, A., Hill, K., Gee, J., Marston, C., De, B., Popovic, T., Sue, D., Wilkins, P., Avashia, S., Drumgoole, R., Helma, C., Ticknor, L., Okinaka, R. and Jackson, J 2006. Journal of clinical microbiology, 44(9): 3352-3360. 2., FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International. 3., The United States Pharmacopeia, 2008, USP31/NF26, The United States Pharmacopeial Convention, Rockville, MD.

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