B.C. Motility Test Medium

M906

Intended Use:

Recommended for testing motility of *Bacillus cereus*.

Composition**

Ingredients	Gms / Litre
Tryptone	10.000
Yeast extract	2.500
Dextrose (Glucose)	5.000
Disodium hydrogen phosphate	2.500
Agar	3.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 23.0 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Dispense in 2-3 ml amounts in screw capped tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubes to cool in an upright position.

Principle And Interpretation

Bacillus cereus is widely distributed in nature and can be isolated from a variety of foods. *B. cereus* causes food poisoning due to the consumption of contaminated rice (4,6), eye infections (1) and a wide range of other clinical conditions like abscess formation, meningitis, septicemia and wound infection. *Bacillus cereus* is a known cause of disease mastitis, especially in ewes and heifers among the veterinarians. BC Motility Test Medium is formulated as per APHA (4) for the cultivation and examination of motility of *B. cereus* strains.

The medium contains tryptone, yeast extract and dextrose that provide nutrients while phosphate helps in maintaining the pH. Agar content of the medium is crucial for determining motility. 0.3% agar renders the medium semisolid in which motile bacteria produce diffused turbidity due to growth, while non-motile bacteria exhibit a line of growth only along the line of inoculation. This medium is inoculated by stabbing down the center with 3 mm loopful of culture and incubated at 18-24 hours at 30°C. Rhizoid strains of *B. cereus var mycoides* produce characteristic fuzzy growth in semisolid media due to expansion of the filamentous growth but they are not motile by means of flagella.

Type of specimen

Isolated microorganism

Specimen Collection and Handling

This medium is inoculated by stabbing down the center with 3 mm loopful of culture and incubated at 18-24 hours at 30°C. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

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 specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. It is not a confirmatory test hence complete identification should include the morphology, gram reaction, biochemical and serological 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

Cream to yellow homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.3% Agar gel.

Colour and Clarity of prepared medium
Yellow coloured, clear to very slightly opalescent gel forms in tubes as butts

Reaction
Reaction of 2.3% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Motility
Bacillus anthracis ATCC 14578	50-100	good-luxuriant	negative reaction,growth along the stabline
Bacillus cereus ATCC 10876	50-100	good-luxuriant	positive reaction, growth away the stabline
Bacillus cereus var mycoides	50-100	good-luxuriant	negative reaction,growth along the stabline
Bacillus thuringiensis ATCC 10792	50-100	good-luxuriant	positive reaction, growth away from stabline

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. Bouza E., Grant S., Jordan C., et al, 1979, Arch.Ophthalmol., 97:498
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
4. Mortimer P.R. and McCann.G, 1974, Lancet, 104:3.
5. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
6. Wohlgemuth K., Kirkbride, C.A., Bicknell, E. J. and Ellis, R.P., 1972, J. Am. Vet. Med. Ass. 161:1691.

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