Modified V.P. Broth

M637

Intended use

Modified V.P. Broth is used for performing V.P. test of *B.cereus* from food samples.

Composition**

Ingredients	Gms / Litre
Proteose peptone	7.000
Glucose (Dextrose)	5.000
Sodium chloride	5.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 17 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense 5 ml amounts in test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Bacillus cereus is widely distributed in nature and can be isolated from a number of foods. However, unless it is able to grow, its presence is not significant to human health. Consumption of foods contaminated with *B.cereus* cells results in food poisoning. Modified V.P. Broth, formulated as per Smith, Gordon and Clark (5) is used for performing V.P. test. This medium is also recommended by APHA (4) for the confirmation of *B.cereus* in foods. Modified V.P. Broth has a different composition from the conventional MR-VP Broth used for methyl red and Voges-Proskauer test for differentiating *Escherichia coli* and *Enterobacter* species.

Proteose peptone in the medium provides nitrogenous nutrients. Glucose is the fermentable carbohydrate and carbon source in the medium. Acetyl methyl carbinol is produced from glucose by *B. cereus.* After inoculation and incubation at 35°C for 48 hours, the presence of acetyl methyl carbinol is determined by adding 0.2 ml of 40% potassium hydroxide (R030) and 0.6 ml of 5% alcoholic 1-naphthol (R029) solution to 1.0 ml of culture tube. This reaction is hastened by the addition of a few crystals of creatinine by which the reddish pink to purple colour development takes place within 15 minutes.

Type of specimen

Food and dairy samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,4,6). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

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. Reagents used should be fresh.

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

Colour and Clarity of prepared medium

Light yellow coloured clear solution without any precipitate

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	VP Test
Bacillus cereus ATCC 10876	50-100	luxuriant	positive reaction, pinkish red to purple colour

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. Use before expiry date on the label

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. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
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. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
5. Smith N. R., Gordon R. E. and Clark F. E., 1952, USDA Monograph No. 16, Washington, D.C.
6. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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