

Technical Information

Lactose MiVeg Broth

Product Code : VM2003

Application:- Lactose MiVeg Broth is used to detect coliforms found in water, foods, and dairy products as per Standard Methods.

Composition

Ingredients	Gms / Litre
MiVeg peptone	5.000
MiVeg extract	3.000
Lactose	5.000
Final pH (at 25°C)	6.9 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Lactose MiVeg Broth is prepared by adding vegetable peptones in place of animal based peptones thereby making the medium BSE/TSE risks free. Lactose MiVeg Broth is the modification of Lactose Broth which is recommended by APHA for the performance and confirmation of the presumptive test to detect coliforms present in water (2), food (3) and milk (4). This medium was initially listed as an alternative to Lauryl Sulphate Broth in the presumptive Standard Total Coliform Multiple-Tube (MPN) Test for water analysis.

Examination of water, foods, and dairy products, for detection of coliforms, is one of the most common tests carried out in a microbiology laboratory, partly because of the relative ease and speed with which these tests can be accomplished. Where it is claimed that drinking water has been processed for safety, the finding of such organism demonstrates a failure of the process. It is a valuable bacterial indicator for determining the extent of fecal contamination of recreational surface waters or drinking water (1).

MiVeg peptone and MiVeg extract supplies all the essential nutrients required for the growth of the organisms. Lactose is a fermentable carbohydrate. Lactose MiVeg Broth tubes are inoculated with dilutions of water or milk, etc. under test, and incubated at 35-37°C, which are then examined after 24 to 48 hours for gas formation. Members of the coliform group are defined as aerobic and facultative anaerobic gram-negative and non-spore-forming bacilli, which ferment lactose with gas formation within 48 hours at 35-37°C. Large water samples may require double strength Lactose Broth to minimize the final volume.

Methodology

Suspend 13 grams of powder media in 1000 ml distilled water. Mix thoroughly and heat if necessary to boiling to dissolve the medium completely. For larger inocula (10 ml or more), concentrated medium may be prepared to account for medium dilution by the inoculum. Dispense in tubes containing inverted Durham's tube as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

Cream to yellow coloured, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Light amber clear solution without any precipitate.

Reaction

Reaction of 1.3% w/v aqueous solution is pH 6.9 ± 0.2 at 25°C.

pH Range

6.7 - 7.1

Cultural Response/Characteristics

VM2003: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Gas
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	Positive reaction
<i>Enterococcus faecalis</i> ATCC 29212	50-100	luxuriant	Negative reaction
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	Positive reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	luxuriant	Negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 9027	50-100	luxuriant	Negative reaction
<i>Escherichia coli</i> ATCC 8739	50-100	luxuriant	Positive reaction
<i>Escherichia coli</i> NTC 9002	50-100	luxuriant	Positive reaction

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 day.

Further Reading

1. Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam
2. Eaton A. D., Clesceri L. S., Rice E. W. and Greenberg A W.(Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
3. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
4. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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