

Technical Information

Lactose Monohydrate Broth (Broth Medium D)

Product Code: DM 2003E

Application: - Lactose Broth is used for the detection of coliform bacteria in water, foods, and dairy products as per Standard Methods.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Beef 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 Broth is recommended by European pharmacopoeia ⁽⁴⁾ for selective pre-enrichment of *Enterobacteriaceae* as well as for *E.colli* and *Salmonella* in water, food and pharmaceutical products. The medium is used for detection of specified microorganisms of non-sterile products according to European pharmacopoeia (EP). This medium is also recommended by other pharmacopoeia ⁽⁵⁻⁷⁾ also. Lactose Broth is also recommended by APHA for performance and confirmation of the presumptive test for coliform bacteria in water ⁽¹⁾ food ⁽²⁾, milk ⁽³⁾. This medium can be used as an alternate to Lauryl Sulphate Broth in the presumptive test of the MPN of standard coliforms. Pancreatic digest of gelatin and beef extract in the medium supply essential nutrients to the organisms. Lactose is a fermentable carbohydrate for the coliforms. Tubes of Lactose Broth are inoculated with dilutions of water or milk, etc. under test, and incubated at 35°C and examined for gas formation after 24 and 48 hours.

Members of the coliform group are defined as aerobic and facultative anaerobic gram-negative and non-sporing bacilli, which ferment lactose with gas formation within 48 hours at 35°C. In testing dairy products, Lactose Broth is used only in the completed test ⁽³⁾. 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. Shake well & heat if necessary to dissolve the medium completely. For larger inocula (10 ml or more), concentrated medium may be prepared taking into account medium dilution by the volume of inoculum added. Dispense in tubes containing inverted fermentation vial (Durham tube) as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.



Dehydrated Culture Media
Bases / Media Supplements

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light to medium amber coloured clear solution without any precipitate

Reaction

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

pH range

6.70-7.10

Cultural Response/Characteristics

DM 2003E: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	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	
<i>Escherichia coli</i> ATCC 8739	50-100	Luxuriant	positive reaction
<i>Escherichia coli</i> NCTC 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^o in sealable plastic bags for 2-5 days.

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, Was hington, D.C.
- 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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