



Coliform Broth

M1211

Intended Use:

Recommended for isolation and cultivation of coliform organisms from cream, yogurt and raw milk.

Composition**

Ingredients	g / L
Proteose peptone	10.000
Yeast extract	6.000
Bile salts	20.000
Sodium deoxycholate	0.100
Lactose	20.000
Sodium lauryl sulphate (SLS)	1.000
Bromocresol purple	0.035
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 57.14 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50° C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Bacteriological Examination of water samples to determine its suitability for drinking and other domestic purpose has traditionally been done by the most probable number (MPN) procedures or the membrane filter (MF) technique (1). The presence of total coliforms, faecal coliforms or *Escherichia coli* is well recognized as an indication of unsafe or poor water quality for which corrective measures should be taken. Coliform Broth is recommended for isolation and cultivation of coliforms organisms from cream yogurt and raw milk (2).

Proteose peptone and yeast extract provides nitrogenous and carbonaceous compounds, vitamin B complex and other nutrients. Lactose is the fermentable carbohydrate. Bromo cresol purple is the pH indicator. Coliforms that ferment lactose produce acid and gas. The acidity formed is indicated by a colour change of the medium from purple to yellow, indicated by the pH indicator dye bromo cresol purple. Sodium deoxycholate and bile salts inhibit gram positive bacteria. Sodium lauryl sulphate is inhibitory to many organisms but not to coliforms. A distinct yellow colour results from the fermentation of lactose and gas production can be detected as bubbles with gentle shaking.

Type of specimen

Dairy samples; Water samples.

Specimen Collection and Handling:

For dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (3,4).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(5)
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. Further biochemical and serological tests must be carried out for further identification.

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

Purple coloured, clear solution without any precipitate

Reaction

Reaction of 5.71% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

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

Organism	Inoculum (CFU)	Growth	Acid	Gas
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	50-100	good - luxuriant	positive reaction, yellow colour	positive reaction
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good - luxuriant	positive reaction, yellow colour	positive reaction
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ⁴	inhibited		
<i>Salmonella Typhimurium</i> ATCC 14028 (00031*)	50-100	good - luxuriant	negative reaction, no colour change	negative reaction

Key : (*) Corresponding WDCM numbers.

(#) Formerly known as *Enterobacter aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°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 (6,7).

Reference

1. Eaton A. D., Clesceri L. S., Rice E. W. and Greenberg A. E., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
2. Atlas R. M., 2004, Handbook of Microbiological Media, Lawrence C. Parks (Ed.), 3rd Edition, CRC Press.
3. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., 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.
5. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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.

Revision : 04/ 2024

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.