



Fluid Lactose Medium

MU1003

Intended Use:

Recommended for detection of coliform bacteria in pharmaceutical products, water, food and dairy products in accordance with USP.

Composition**

| Ingredients | g / L |
|-----------------------------------|---------|
| Gelatin peptone \$ | 5.000 |
| HM peptone B # | 3.000 |
| Lactose | 5.000 |
| pH after sterilization (at 25°C) | 6.9±0.2 |

**Formula adjusted, standardized to suit performance parameters

Equivalent to Beef extract

\$ Equivalent to Pancreatic digest of gelatin

Directions

Suspend 13.0 grams in 1000 ml purified/distilled water. Heat if necessary to ensure complete solution. 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 fermentation vial (Durham's tube) as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Fluid Lactose Medium is recommended by APHA and United States Pharmacopoeia (1) in the performance and confirmation of the presumptive test for coliform bacteria in water(2), food(3) and milk (4). This medium can be used as an alternate to Lauryl Sulphate Broth in the presumptive test of the MPN of standard coliforms. This medium is also used for pre-enrichment of *Salmonella* for its detection in pharmaceutical raw materials.

Gelatin peptone and HM peptone B supply essential nutrients to the organisms. Lactose is a fermentable carbohydrate for the coliforms. Tubes of Fluid Lactose Medium are inoculated with dilutions of water or milk, etc. under test, and incubated at 35-37°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, Fluid Lactose Medium is used only in the completed test (3). Large water samples may require double strength Fluid Lactose Medium to minimize the final volume.

Type of specimen

Food and dairy samples; Water samples, Pharmaceutical samples

Specimen Collection and Handling:

For pharmaceutical samples, follow appropriate techniques for sample collection, processing as per guidelines (1). For food and 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.(2) 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 tests must be carried out for confirmation.
2. Large water samples may require double strength Fluid Lactose Medium to minimize the final volume.

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 amber coloured clear solution in tubes

Reaction

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

pH

6.70-7.10

Growth Promotion Test

As per United States Pharmacopoeia.

Cultural Response

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

| Organism | Inoculum (CFU) | Growth | Gas |
|---|----------------|-----------|-------------------|
| # <i>Klebsiella aerogenes</i> ATCC 13048 (00175*) | 50-100 | luxuriant | Positive reaction |
| <i>Enterococcus faecalis</i> ATCC 29212 (00087*) | 50-100 | luxuriant | Negative reaction |
| ^ <i>Pseudomonas paraeruginosa</i> ATCC 9027 (00026*) | 50-100 | luxuriant | Negative reaction |
| <i>Escherichia coli</i> ATCC 8739 (00012*) | 50-100 | luxuriant | Positive reaction |

Key : * Corresponding WDCM numbers

^ Formerly known as *Pseudomonas aeruginosa*
 (#) 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 (5,6).

Reference

1. The United States Pharmacopoeia-National Formulary (USP-NF), 2022.
2. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
3. 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.
4. Wehr H M and Frank J H., 2004, Standard Methods for the Examination of Dairy Products, 17th ed., APHA Inc., Washington, D.C.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
6. 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 : 03/2024

Disclaimer :

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