



Fluid Lactose Medium

M026

Fluid Lactose Medium is used as a pre-enrichment medium for the detection of coliform bacteria in water, dairy products and food samples.

Composition**

Ingredients	Gms / Litre
Pancreatic digest of gelatin	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

Directions

Suspend 13 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Mix well and distribute into tubes with inverted Durhams tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. The concentration of medium is adjusted in accordance with sample.

Principle And Interpretation

Coliforms are rod shaped gram-negative organisms that ferment lactose with the production of acid and gas. They are regarded as bacterial indicators of sanitary quality of foods and water. *Salmonella* is a rod shaped gram-negative enterobacteria commonly implicated in foodborne illness. These bacteria are present in low numbers in food and other products and also may be in a stressed condition. Before subjecting them to selective enrichment, for maximum recovery a pre-enrichment is necessary. Also, the presence of non-coliform bacteria and substances indigenous to the sample may interfere with the growth and recovery of coliforms. Therefore pre-enrichment in a non-selective medium facilitates detection of sublethally injured cells. Fluid Lactose Medium is a pre-enrichment medium, recommended by APHA, for the detection of coliform bacteria in water, dairy products and food samples (1, 2, 3). When competing lactose utilizing bacteria are present in the test sample, a resulting drop in pH generates a bacteriostatic effect on the competing microflora. It is also used in the performance of microbial limit test for *Salmonella* species and *Escherichia coli*.

Beef extract and pancreatic digest of gelatin provide essential nutrients for bacterial metabolism. Lactose is the sole source of fermentable carbohydrate. Growth with gas formation is a presumptive test for coliforms. Whenever there is larger inoculum multiple strength lactose broth is used.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured, clear solution without any precipitate

Reaction

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

pH

6.70-7.10

Cultural Response

M026: Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 48 hours.

Organism	Inoculum (CFU)	Growth	Gas
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Cultural Response

<i>Enterobacter aerogenes</i> ATCC 13048	50-100	good to luxuriant	positive reaction
<i>Escherichia coli</i> ATCC 25922	50-100	good to luxuriant	positive reaction
<i>Enterococcus faecalis</i> ATCC 29212	50-100	good to luxuriant	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good to luxuriant	negative reaction

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), 1998, Standard Methods for the Examination of Water and Waste Water, 20th Ed., APHA, N.Y.
2. Marshall R. T., (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th Ed., APHA, N.Y.
3. Downes F. P. and Ito K. (Ed.). 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.

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