Technical Information

Fluid Lactose Medium

Product Code: DM 1026

Application: - 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

Principle & 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 associated 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, a pre-enrichment is necessary for maximum recovery. Even, the presence of non-coliform bacteria and chemicals associated with 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 [1-3]. When competing lactose utilizing bacteria are present in the test sample, drop in pH of media generates a bacteriostatic effect on the competing microflora. It is also used in the performance of microbial limit test for *Salmonella* and *Escherichia coli species.*

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.

Methodology

Suspend 13 grams of powder media in 1000 ml distilled water. Shake well & 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.

Quality Control

Physical 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 range 6.70-7.10

Cultural Response/ characteristices
DM 1026: Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 48 hours.

Organism	Inoculum (CFU)	Growth	Gas
Enterobacter aerogenes ATCC 13048	50-100	good to luxuriant	Positive reaction
Escherichia coli ATCC 25922	50-100	good to luxuriant	Positive reaction
Enterococcus faecalis ATCC 29212	50-100	good to luxuriant	negative reaction
Pseudomonas aeruginosa ATCC 27853	50-100	good to luxuriant	negative 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. 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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