



Lauryl Tryptose Mannitol Broth w/ Tryptophan

M1070

Intended Use:

A single tube medium used for confirmation of *Escherichia coli* in drinking water.

Composition**

Ingredients	Gms / Litre
Tryptose	20.000
Mannitol	5.000
Sodium chloride	5.000
Dipotassium phosphate	2.750
Monopotassium phosphate	2.750
Sodium lauryl sulphate	0.100
L-Tryptophan	0.200
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35.8 grams in 1000 ml purified / distilled water. Warm gently to dissolve the medium completely. Dispense in tubes with inverted Durhams tubes. Sterilize by autoclaving at 115°C for 10 minutes. Cool to 45-50°C.

Principle And Interpretation

Identification of bacteria that constitute the coliform group sometimes is necessary to determine the nature of pollution. It is of particular importance in reference to distinguishing the presence of *Escherichia coli*, an indicator of fecal contamination. Lauryl Tryptose Mannitol Broth w/ Tryptophan is a single tube medium used for the confirmation of *E. coli* in drinking water as recommended by report 71 (1). This medium is also recommended by the ISO committee (2) and is also a suitable medium as per the requirements of the EC Directive (3) for the quality of drinking water. This medium may be used in parallel to Lauryl Tryptose Broth (M080) to detect non-lactose fermenting strains of *E. coli*.

Tryptose is the source of carbon, nitrogen, vitamins, amino acids and other essential growth requirements. Mannitol is the fermentable carbohydrate. Phosphates buffer the medium whereas sodium lauryl sulphate serves to inhibit accompanying non-coliform bacteria. L-tryptophan is a substrate of tryptophan deaminase enzyme.

E. coli is confirmed by gas and indole production when incubated at 44°C for 24 hours. If the indole test is negative even if in a single tube medium, repeat the test in Tryptone Water (M463). Each tube showing acid and gas in the multiple tube test is subcultured to a tube of Lauryl Tryptose Mannitol Broth with Tryptophan and incubated at 44°C.

Type of specimen

Water samples

Specimen Collection and Handling

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(3) 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.Incorrect inoculum concentration may produce inaccurate results.

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

Yellow coloured clear solution without any precipitate

Reaction

Reaction of 3.58% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

Cultural characteristics observed after an incubation at 44°C for 24 hours .

Organism	Inoculum (CFU)	Growth	Gas	Indole Production
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	luxuriant	positive reaction	positive reaction, red ring at the interface of the medium
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	>=10 ⁴	inhibited		
Rs ogxknbnbbtr tqdtr rtaro- tqdtr SBB 14812 ///23)(>=10 ⁴	inhibited		

Key : (*) Corresponding WDCM numbers.

(#) Formerly known as *Enterobacter aerogenes*

Reference

1. Departments of the Environment, Health and Social Security and Public Health Laboratory Service, 1982, The Bacteriological Examination of Drinking Water Supplies, Report on Public Health and Medical Subjects No. 71, HMSO, London.
2. International Organization for Standardization (ISO), 1990, Draft ISO/DIS 9308.
3. Joint Circular 20/82, Departments of the Environment, 1982, incorporating EC Directive relating to the Quality of Water intended for Human Consumption (80/778/EEC), HMSO, London.

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