



Lauryl Tryptose Mannitol Broth w/ Tryptophan

M1070

Lauryl Tryptose Mannitol Broth w/ Tryptophan is 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 distilled water. Warm gently to dissolve the medium completely. Dispense in tubes with inverted Durhams tubes and sterilize by autoclaving at 115°C for 10 minutes.

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.

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

M1070: Cultural characteristics observed after an incubation at 44°C for 24 hours .

Organism	Inoculum (CFU)	Growth	Gas	Indole Production
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Cultural Response

<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	positive reaction	positive reaction, red ring at the interface of the medium
<i>Enterobacter aerogenes</i> ATCC 13048	$\geq 10^3$	inhibited		
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited		

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. 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.

Revision : 2 / 2015

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