



Lactose Peptone Broth

M1389

Lactose Peptone Broth is recommended for detection of coliform organisms in water.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	17.000
Papaic digest of soyabean meal	3.000
Lactose	10.000
Sodium chloride	5.000
Bromocresol purple	0.020
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35.02 grams (single strength) or 105.06 grams (triple strength) in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or bottles containing inverted Durhams tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Coliform bacteria are commonly used as bacterial indicator of sanitary quality of foods and water. Where it is claimed that drinking water has been processed for safety, the finding of such organism demonstrates a failure of the process. It is a valuable bacterial indicator for determining the extent of faecal contamination of recreational surface waters or drinking water (1). Coliforms are defined as rod-shaped gram-negative organisms, which ferment lactose with the production of acid and gas when incubated at 35°C.

Lactose Peptone Broth was originally described in German Standard Methods and German Drinking Water Regulations (2) as a non-selective enrichment and detection medium for *Escherichia coli* and other coliforms in water specimens. German standards suggest the use of MPN technique with 0.1, 1.0 and 10 ml of sample and an incubation at $36 \pm 1^\circ\text{C}$ for 44 ± 4 hours. Depending upon the sample volume the medium can be either used as single strength or triple strength. Tubes that change to yellow and eventual gas production in Durhams tubes are considered positive.

Casein enzymic hydrolysate and papaic digest of soyabean meal provide all the essential nitrogenous growth nutrients. Lactose is the fermentable sugar. Lactose fermentation and gas production form the basis for the presumptive coliform identification. Sodium chloride maintains osmotic equilibrium. Bromocresol purple is the pH indicator of the medium, which turns yellow as a result of acid production from the fermentation of lactose.

Quality Control

Appearance

Cream to greenish yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Purple coloured, clear solution without any precipitate

Reaction

Reaction of 3.5% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

M1389: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Acid production	Gas Production
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<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	positive reaction, yellow colour	positive reaction
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	negative reaction	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. Corry J. E. L., Curtis G. D. W. and Baird R. M., 1995, Culture Media for Food Microbiology. Vol. 34, Progress in Industrial Microbiology, Elsevier, Amsterdam
2. DIN Deutsches Institute für Normung, 1991, e.V.: Deutsche Einheitsverfahren zur Wasser-, Abwasser-und Schlammuntersuchung: Mikrobiologische Verfahren (Gruppe K), Nachweis von *Escherichia coli* und coliformen Keimen (K6). Reference Method DIN 38411.

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