



PRODUCT SPECIFICATION SHEET

Lactose Peptone Broth (DM918)

Intended Use

Lactose Peptone Broth (DM918) is recommended for detection of coliforms in water.

Product Summary and Explanation

Coliform organisms in water samples pose a major concern to the drinking water supply, *E.coli* being commonly used as bacterial indicator of sanitary quality of foods and water. Finding *E. coli* in a public water supply indicates that the disinfection process is not working. 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 is based on the Lactose Peptone Broth formula described in German Standard Methods and German Drinking Water Regulations. Lactose Peptone Broth is recommended as a non-selective broth enrichment and detection medium for *E. coli* and other coliform bacteria present in water.⁽²⁾ 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. The medium can be either used as single strength or triple strength depending upon the sample volume. Tubes that change to yellow and eventual gas production in Durhams tubes are considered positive.

Principles of the Procedure

Lactose Peptone Broth contains casein enzymic hydrolysate and papaic digest of soyabean meal which provide the carbon and nitrogen sources required for good growth of a wide variety of organisms. Lactose is provided as a source of fermentable carbohydrate. Sodium chloride is present in the medium to provide a suitable osmotic environment. Bromocresol purple is used as a colorimetric indicator to show the production of acid from the fermentation of lactose.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	17.00
Papaic digest of soyabean meal	3.00
Lactose	10.00
Sodium chloride	5.00
Bromocresol purple	0.02
Final pH: 7.4 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 35.02 grams (single strength) 105.06 grams (triple strength) of the medium in one liter of distilled water.
2. Heat if necessary to dissolve the medium completely.
3. Dispense in tubes or bottles containing inverted Durhams tubes.
4. Autoclave at 121°C , 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

Dehydrated Appearance	Cream to greenish yellow homogeneous free flowing powder
Prepared Medium	Purple coloured, clear solution without any precipitate





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Reaction of 3.5% Solution	pH : 7.4 ± 0.2 at 25°C
Gel Strength	Not Applicable

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

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Acid Production	Gas Production
1.	<i>Escherichia coli ATCC 25922</i>	50-100	good-luxuriant	positive reaction, yellow colour	positive reaction
2.	<i>Salmonella typhimurium ATCC 14028</i>	50-100	good-luxuriant	negative reaction	negative reaction

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Direct Broth Method

1. Add 100 ml of sample to 50 ml of triple strength Lactose Peptone Broth.
2. Incubate at 36 ± 1°C for 24-48 hours.
3. Examine tubes or bottles for evidence of acid formation and gas production.

Membrane Filtration Broth Method

1. Filter 100 ml of sample through a sterile 0.45 micron membrane filter.
2. Remove filter and place in 50 ml of single strength Lactose Peptone Broth.

Refer appropriate references for specific test procedures.

Results

1. Acid formation is demonstrated by a change in the color of the medium from reddish-purple to yellow.
2. Gas production is demonstrated by the displacement of the medium from the Durham tube.
3. Production of both acid and gas is a presumptive indication of the presence of coliform organisms.
4. Subculture presumptive positives onto Endo Agar and MacConkey Agar. Incubate at 35 ± 2°C for 24 hours. Examine plates for the presence of typical coliform colonies.
5. Refer appropriate references and test procedures for further biochemical testing is necessary to confirm the presence and identify coliforms.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Detection of coliform bacteria in Lactose Peptone Broth using this method is only a presumptive test.
2. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
3. Consult appropriate texts for detailed information and recommended procedures.





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Packaging

Product Name : Lactose Peptone Broth

Product Code : DM918

Available Pack sizes : 500gm

References

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 Schlammunter suchung: Mikrobiologische Verfahren (Gruppe K), Nachweis von Escherichia coli und coliformen Keimen (K6). Reference Method DIN 38411.

Further Information

For further information please contact your local MICROMASTER Representative.



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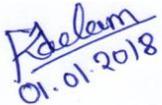
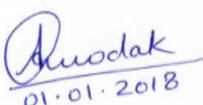
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