



## PRODUCT SPECIFICATION SHEET

### Broth Medium D (Lactose Monohydrate Broth) (DM527B)

#### Intended Use

Broth Medium D (Lactose Monohydrate Broth) (DM527B) is recommended for detection of coliform bacteria in water, food, dairy products in compliance with BP.

#### Product Summary and Explanation

Coliforms are defined as rod-shaped gram-negative organisms, which ferment lactose with the production of acid and gas when incubated at 35°C. They are regarded as bacterial indicators of sanitary quality of foods and water. *Salmonella* is a rod shaped gram-negative enterobacteria and is the primary cause of food-borne illness among enteric pathogens. These bacteria are present in low numbers in food and other products and also may be in a stressed condition. For maximum recovery a pre-enrichment is necessary, before subjecting them to selective enrichment. Also, the presence of non-coliform bacteria and substances indigenous to the sample may interfere with the growth and recovery of coliforms. Therefore pre-enrichment in a non-selective medium facilitates detection of sub-lethally injured cells.

Lactose Broth is recommended by British pharmacopoeia<sup>(1)</sup> for selective pre-enrichment of *Enterobacteriaceae* as well as for *E.coli* and *Salmonella* in water, food and pharmaceutical products. According to British Pharmacopoeia the medium is used for detection of specified microorganisms of non-sterile products and is also recommended by various other pharmacopoeia<sup>(2,3,4)</sup> APHA recommends Lactose monohydrate broth in the performance and confirmation of the presumptive test for coliform bacteria in water,<sup>(5)</sup> food<sup>(6)</sup> and milk.<sup>(7)</sup> This medium can be used as an alternate to Buffered sodium chloride-peptone solution pH7.00 for the revival of *Enterobacteriaceae* and gram negative bacteria. The medium is incubated for a time sufficient to revive the bacteria but not the multiplication of the bacteria. It is recommended to incubation time is usually for 2 hours and not for more than 5 hours.<sup>(1)</sup>

#### Principles of the Procedure

Broth Medium D (Lactose Monohydrate Broth) contains beef extract and pancreatic digest of gelatin which provides carbon, nitrogen, amino acids and other essential nutrients for bacterial metabolism. Lactose monohydrate is the sole source of fermentable carbohydrate.

#### Formula / Liter

Ingredients	Gms / Liter
Pancreatic digest of gelatin	5.00
Beef extract	3.00
Lactose monohydrate	5.00
Final pH: 6.9 ± 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 12.75 grams of the medium in one liter of distilled water.
2. Heat if necessary to dissolve the medium completely.
3. For larger inocula (10 ml or more), concentrated medium may be prepared to account for medium dilution by the inoculum. Dispense in tubes containing inverted fermentation vial (Durhams tube) as desired.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.





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### Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light amber coloured, clear solution without any precipitate
Reaction of 1.27% Solution	pH : 6.9 ± 0.2 at 25°C
Gel Strength	Not Applicable

### Growth Promotion Test

Cultural characteristics observed after an incubation at 35-37°C for specified time.

### Expected Cultural Response :

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Recovery within 2 hours of incubation	Recovery within <=5 hours of incubation
1.	<i>Escherichia coli ATCC 8739</i>	50-100	no increase in colony count	no increase in colony count
2.	<i>Pseudomonas aeruginosa ATCC 9027</i>	50-100	no increase in colony count	no increase in colony count

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

### Test Procedure

Refer appropriate references for specific test procedures.

### Results

Refer appropriate references and test procedures for interpretation of results.

### 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. Growth with gas formation is a presumptive test for coliforms. Whenever there is larger inoculum multiple strength lactose broth is used.
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.

### Packaging

Product Name : Broth Medium D (Lactose Monohydrate Broth)

Product Code : DM527B

Available Pack sizes : 100gm/500gm

### References

1. British Pharmacopoeia, 2009, The Stationery office British Pharmacopoeia.
2. The United States Pharmacopoeia, 2008, The United States Pharmacopoeial Convention. Rockville, MD.
3. European Pharmacopoeia, 2008, European Department, for the quality of Medicines.





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4. The Indian Pharmacopoeia 2007, Govt. of India, 2007. The Controller of Publication, Delhi.
5. Eaton A. D., Clesceri L. S. and Greenberg A W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.
6. Downes F P and Ito K (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C
7. Wehr H M and Frank J H., 2004, Standard Methods for the Examination of Dairy Products, 17th ed., APHA Inc., Washington, D.C.

### Further Information

For further information please contact your local MICROMASTER Representative.



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