
LACTOSE BROTH

INTENDED USE

Remel Lactose Broth is a liquid medium recommended for use in qualitative procedures for detection of coliforms in water, food, and dairy products, as a pre-enrichment broth for salmonellae, and in the study of lactose fermentation of bacteria in general.

SUMMARY AND EXPLANATION

In 1961, North used Lactose Broth as a pre-enrichment medium for detection of *Salmonella* contamination in dried foods.¹ Although most salmonellae do not utilize lactose, North concluded when competing bacteria are present in a food sample, a resulting drop in pH generates a bacteriostatic effect on competing microflora.² This pH change does not appear to affect growth of or be lethal to salmonellae even after a week's growth in Lactose Broth. Lactose Broth is also used in the Most Probable Number (MPN) Test for water analysis and for detection of coliforms in food and dairy products.³⁻⁶

PRINCIPLE

Gelatin peptone and beef extract supply nutrients essential for bacterial metabolism. Lactose provides a ready source of energy, and fermentation of lactose is detected by gas production in the Durham tube. Evidence of gas production is a presumptive test for the presence of coliforms.

REAGENTS (CLASSICAL FORMULA)*

Gelatin Peptone	5.0 g	Beef Extract	3.0 g
Lactose.....	5.0 g	Demineralized Water.....	1000.0 ml

pH 6.9 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PRECAUTIONS

This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

PREPARATION OF DEHYDRATED CULTURE MEDIUM

1. Suspend 13 g of medium in 1000 ml of demineralized water.
2. Warm slightly to dissolve completely.
3. Dispense as required into test tubes containing inverted fermentation vials.
4. Sterilize at 121°C for 15 minutes or following established laboratory procedures.

PROCEDURE

1. Consult current editions of appropriate references for the recommended procedure for sample preparation, inoculation, and testing.²⁻⁶
2. Incubate aerobically for the proper time duration at the appropriate temperature following established laboratory procedures.
3. Observe for gas production and/or growth. Small bubbles forming on the walls of the tube or in the fermentation vials is evidence of gas production. Further testing may be required to identify the isolate. Consult appropriate references for further instructions.²⁻⁶

QUALITY CONTROL

Each lot number of Lactose Broth has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures at or prior to the time of use. If aberrant quality control results are noted, sample results should not be reported.

CONTROL

Escherichia coli ATCC® 25922

Salmonella enterica serovar Typhimurium ATCC® 14028

INCUBATION

Aerobic, 48 h @ 33-37°C

Aerobic, 48 h @ 33-37°C

RESULTS

Growth w/ gas production

Growth w/o gas production

BIBLIOGRAPHY

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2. Downes, F.P. and K. Ito. 2001. Compendium of Methods for the Microbiological Examination of Foods. 4th ed. APHA, Washington, D.C.
3. Food and Drug Administration. 2000. Bacteriological Analytical Manual Online. AOAC International, Gaithersburg, MD. <http://www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalManualBAM/ucm055778.htm>.
4. AOAC International. 2002. Official Methods of Analysis of AOAC International. 17th ed., 1st rev. AOAC International, Washington, D.C.
5. Wehr, H.M. and J.F. Frank. 2004. Standard Methods for the Examination of Dairy Products. 17th ed. APHA, Washington, D.C.
6. Eaton, A.D., L.S. Clesceri, E.W. Rice, and A.E. Greenberg. 2005. Standard Methods for the Examination of Water and Wastewater. 21st ed. APHA, Washington, D.C.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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