

70142 Lactose Broth

Recommended for use in the presumptive test for members of the coliform group in water, milk and other material. It corresponds largely to the formulation of the United States Pharmacopeia.

Composition:

Ingredients	Grams/Litre
Meat extract	3.0
Peptone	5.0
Lactose	5.0
Final pH 6.9 +/- 0.2 a 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions:

Add 13 g to 1 litre of distilled water. Mix well and distribute into containers fitted with Durham tubes. Sterilize by autoclaving at 121°C for 15 minutes. Cool down slowly to prevent bubbles in Durham tubes.

Gas production from lactose fermentation is indicated by using inverted Durham tubes. Inoculate the tubes containing 10 ml of Lauryl sulfate Broth and the Durham tubes and incubate 35°C for 24-48 hours. In case of gas formation, the Durham tubes rise or/and show bubbles. Turbidity of the medium accompanied by formation of gas within 48 hours is a positive presumptive test for the presence of *E. coli* and/or other coliform organisms.

Principle and Interpretation:

Meat extract and Peptone provides the nitrogen, carbon compounds, vitamins and amino acids. Lactose is the fermentable sugar. Lactose-positive bacteria metabolize lactose with gas formation, within 48 hour or less is a presumptive evidence of the presence of coliform bacteria. Lactose Broth is used only in completed test. In case you dilute the medium with large water samples produce a Lactose Broth with a higher concentration to have an end concentration of about 13g/l.

Cultural characteristics after 24-48 hours at 35°C.

Organisms (ATCC)	Growth	Gas formation
<i>Enterobacter aerogenes</i> (13048)	+++	+
<i>Escherichia coli</i> (25922 and 11775)	+++	+
<i>Salmonella typhimurium</i> (14028)	+++	-
<i>Enterococcus faecalis</i> (29212)	+++	-
<i>Proteus vulgaris</i> (29212)	-/+	-



References:

1. A.E. Greenberg, R.R.Trussell, L.S. Clesceri (Eds.), Standard Methods for the Examination of Water and Wastewater, 16th ed., APHA Washington, D.C. (1985)
2. M. Speck (Ed.), APHA, Compendium of Methods for the Microbiological Examination of Foods, 3rd ed., Washington, DC. (1984)
3. International Organization for Standardization (ISOI , Draft ISO/DIS 4831. (1991)
4. APHA, American Water Works Association and Water Pollution Control Federation, Standard Methods for the Examination of Water and Wastewater 20th ed., Washington, 1998
5. European Pharmacopeia II, Chapter VIII, 10. United States Pharmacopeia XXIII, Chapter "Microbiol. Limit Test", 1995
6. APHA, Prepared according to specifications in: Stand. Meths. for the Examin. of Water & Sewage, 9th Ed. 186 (1946)
7. APHA, Stand. Meths. for the Examin. of Dairy Prods., 9th Ed. 133 (1948)
8. Richardson (ed.), Stand. Meths. for the Examin. of Dairy Prods., APHA Washington, D.C. (1985)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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