



LAURYL TRYPTOSE BROTH (w/ DURHAM)

- For in vitro use only -

Catalogue No. TL35

Our Lauryl Tryptose Broth is a selective broth for the presumptive detection of coliform organisms from water, dairy products, and other foods.

Lauryl Tryptose Broth is based on Mallmann and Darby's research, which showed the effectiveness of using Lauryl Sulfate to select for coliform organisms when compared to other selective compounds. Our formulation contains casein and meat peptones, which provide the organism with nitrogen, amino acids, and vitamins.

Monopotassium and dipotassium phosphate are the buffering agents, while sodium chloride helps maintain the osmotic equilibrium between the bacterial cell and its environment. By definition, coliform organisms ferment lactose to form acid and gas; therefore lactose is the carbohydrate source contained in the medium along with a durham tube to detect gas production. Sodium lauryl sulfate is the selective agent used to inhibit non-coliform organisms.

Lauryl Tryptose Broth is approved by the APHA as a presumptive test for coliform detection for a variety of samples including water and food. Refer to the appropriate document for an outline of the recommended procedure. The recipe listed is a single strength formulation of Lauryl Tryptose Broth for examining water samples of 1 mL or less. For water samples greater than 1 mL a double-strength formulation may be required.

Formula per Litre of Medium

Tryptose..... 20.0 g
Lactose.....5.0 g
Monopotassium Phosphate 2.75 g

Dipotassium Phosphate.....2.75 g
Sodium Chloride.....5.0 g
Sodium Lauryl Sulfate.....0.1 g

pH 6.8 ± 0.2

Recommended Procedure

Please refer to appropriate references for a more detailed testing procedure:

1. Allow medium to adjust to room temperature.
2. Inoculate the tube with the sample being tested.
3. Incubate at 35°C for 24 hours.
4. Examine the tube for growth and the durham tube for gas production.
5. If no growth is observed re-examine the tubes after an additional 24 hours of incubation at 35°C.

Interpretation of Results

In Lauryl Tryptose Broth, lactose fermentation results in the production of gaseous end products such as carbon dioxide and hydrogen, which collect in the durham tube. A positive presumptive test for coliform organisms is a turbid broth accompanied by gas in the durham tube. A negative test is no growth and/or no gas after the 48 hour incubation period. It is recommended that further biochemical or serological tests be performed on colonies from pure culture to complete identification.

- *Ensure that the Durham tube is empty before inoculating, if air is present in the Durham tube invert the tube several times to remove the air*
- *Turbidity alone is not indicative of a positive test*
- *Lauryl Tryptose Broth when stored at refrigerated temperatures tends to form a precipitate, which dissipates upon warming to room temperature*

- 1941; 31:127.
2. Robert T. Marshall, ed. *Standard Methods for the Examination of Dairy Products*. 16th ed. Washington, D.C.: APHA, 1997.
3. Clesceri, Lenore S., Arnold E. Greenberg, and Andrew D. Eaton, eds. *Standard Methods for the Examination of Water and Wastewater*. 20th ed. Washington, DC: APHA, 1998.
4. *Difco Manual*. 11th edition. Difco Laboratories: Maryland, 1998.

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Quality Control

After checking for correct pH, colour, depth, and sterility, the following organisms are used to determine the growth performance of the completed medium.

Organism	Expected Result
<i>Escherichia coli</i> ATCC 25922	Turbid with gas
<i>Enterobacter aerogenes</i> ATCC 13048	Turbid with gas
<i>Salmonella typhimurium</i> ATCC 14028	Turbid with no gas
<i>Enterococcus faecalis</i> ATCC 29212	No growth with no gas

Storage and Shelf Life

Our Lauryl Tryptose Broth should be stored in an upright position at 4 to 8°C and protected from light. Under these conditions this medium has a shelf life of 26 weeks from the date of manufacture.

References

1. Mallmann, W., and C. Darby. Uses of a lauryl sulfate tryptose broth for the detection of coliform organisms. *Am J Pub Health*