



LST BROTH

INTENDED USE

Lauryl Tryptose Broth and Lauryl Sulfate Broth, which are also known as Lauryl Sulfate Tryptose (LST) Broth, are used for the detection of coliform organisms in materials of sanitary importance.

SUMMARY AND EXPLANATION

Mallmann and Darby developed this medium for the detection of coliform organisms by American Public Health Association (APHA) procedures.¹ They incorporated sodium lauryl sulfate into the formulation since it proved to be selective but not inhibitory for coliforms.

This medium is used for the detection of coliforms in foods and dairy products.² It is now the medium of choice for use in the presumptive phase of the Standard Total Coliform Multiple-Tube (MPN) Test for the microbiological examination of water.³ It is also listed in the *Official Methods of Analysis of AOAC International*.⁴

PRINCIPLE

Peptone provides essential growth substances, such as nitrogen and carbon compounds, sulfur and trace ingredients. The potassium phosphates provide buffering capacity. Sodium chloride maintains osmotic equilibrium.

Lactose provides a source of fermentable carbohydrate for coliform organisms. The fermentation of lactose with gas formation is a presumptive test for coliforms. Sodium lauryl sulfate inhibits organisms other than coliforms.

REAGENTS (FORMULA)

Biopeptone	20.0	g
Lactose	5.0	g
Sodium Chloride	34.0	g
Dipotassium dihydrogen Phosphate	2.75	g
Potassium dihydrogen Phosphate	2.75	g
Sodium Lauryl Sulphate	0.1	g
Deionized Water	1000.0	ml

PROCEDURE

Refer to the official test procedures for the detection of coliforms in the compendia of methods for microbiological examination of foods, dairy products and waters.^{3,4}

EXPECTED RESULTS

After incubation of the tubes with loosened caps at $35 \pm 0.5^\circ\text{C}$ for 24 hours, examine for turbidity and for gas production in the Durham fermentation tubes. If no gas has formed and been trapped in the inverted tube, reincubate and reexamine after 48 hours.^{3,4}

Turbidity of the medium accompanied by formation of gas in any amount in the Durham tubes within 48 hours is a positive presumptive test for the presence of coliforms in the sample.^{3,4} The result should be confirmed by additional standard testing.

QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

Organisms	Incubation	Results
<i>Escherichia coli</i> ATCC 25922	$35 \pm 2^\circ\text{C}$ for 18-48 hours	Growth, With Gas Production
<i>Proteus mirabilis</i> ATCC 12453	$35 \pm 2^\circ\text{C}$ for 18-48 hours	Growth, With Gas Production

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BIBLIOGRAPHY

1. Mallmann and Darby. 1941. Am. J. Public Health 31:127.
2. Wehr and Frank (ed.). 2004. Standard methods for the examination of dairy products, 17th ed. American Public Health Association. Washington, D.C.
3. Eaton, Rice and Baird (ed.). 2005. Standard methods for the examination of water and wastewater, 21st ed., online. American Public Health Association, Washington, D.C.
4. Horwitz (ed.). 2007. Official methods of analysis of AOAC International. 18th ed., online. AOAC International. Gaithersburg, Md.



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