Lauryl Tryptose Broth (Lauryl Sulphate Broth)

Intended Use
Lauryl Tryptose Broth (Lauryl Sulphate Broth) is used for the detection of coliforms, in water, food, dairy products and other food samples.

Summary
Coliforms are considered to be members of *Enterobacteriaceae*, which grow in the presence of bile salts and produce acid and gas from lactose within 48 hours at 37°C. These bacteria can also be defined as members of *Enterobacteriaceae* capable of growing at 37°C, that normally possess β-galactosidase. Lauryl Sulphate Broth is used for the detection of coliforms in water, dairy products and other foods, as recommended by APHA. It can also be used for the presumptive detection of coliforms in water, effluent or sewage by the MPN test. Lauryl Sulphate Broth was developed by Mallmann and Darby. Cowls demonstrated that inclusion of sodium lauryl sulphate makes the medium selective for coliform bacteria. It was later investigated that Lauryl Sulphate Broth gave a higher colon index than the confirmatory standard methods media and also that gas production in Lauryl Sulphate Broth not only acts as a presumptive test but also as a confirmatory test for the presence of coliforms, in the routine testing of water. Lauryl Sulphate Broth is also recommended by the ISO Committee for the detection of coliforms.

Principle
Lauryl Sulphate Broth is designed to obtain rich growth and substantial amount of gas from small inocula of coliform organisms. Aerobic spore-bearers are completely inhibited in this medium. Tryptose provides essential growth substances, such as nitrogen and carbon compounds, sulphate and trace ingredients. The potassium phosphates provide buffering system, while sodium chloride maintains osmotic equilibrium. Sodium lauryl sulphate inhibits organisms other than coliforms.

Formula*

Ingredients	**g/L**
Tryptose	20.0
Sodium Chloride	5.0
Lactose	5.0
Potassium Dihydrogen Phosphate	2.75
Dipotassium Hydrogen Phosphate	2.75
Sodium Lauryl Sulphate	0.1
Final pH (at 25°C)	6.8 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of specimen
Food and Dairy samples; Water samples

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 35.60 g of the powder in 1000 mL purified / distilled water, Mix thoroughly.
2. Warm slightly to dissolve the powder completely.
3. Dispense into tubes containing inverted Durham's tubes.
4. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.

Quality Control

Dehydrated Appearance: Light yellow coloured, homogenous, free flowing powder.
Prepared Appearance: Light yellow coloured, clear solution without any precipitate.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is observed after an incubation at 30°C -35°C for 18-24 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu (at 30°C -35°C for 18 hours).
Inhibitory Properties: No growth of the test microorganism occurs for the specified temperature and not less than the longest period of the time specified, inoculating >100 cfu (at 30°C -35°C for > 24 hours).

Organism (ATCC)	**Growth**	**Gas**
Escherichia coli (25922)	Good	+
Escherichia coli (8739)	Good	+
Klebsiella aerogenes (13048)	Good	+
Staphylococcus aureus subsp. *aureus* (25923)	Inhibited	-
Staphylococcus aureus subsp. *aureus* (6538)	Inhibited	-
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	-

Key:
For Gas (+) - Positive reaction (Bubble formation in Durham's tube)
For gas (-) - Negative reaction (No bubble formation in Durham's tube)

Interpretation of Results

1. If fermentation occurs in the tube incubated at 44°C after 8-24 hours, perform indole test by adding Kovac's reagent.
2. A positive indole test in the broth tube showing gas production at 44°C indicates the presence of *E. coli.*
3. If no fermentation occurs in the tube incubated at 37°C after 24 hours, the primary fermentation is assumed to be due to organisms other than coliforms.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions / Limitations

1. If stored at 2°C-8°C, the broth becomes cloudy or forms a precipitate. This should clear at room temperature.
2. Gas formation is the criterion of growth and not turbidity.
3. Prior to inoculation of the medium, it may be required to invert the tube to release the bubbles that may have formed in the Durham's tubes.
4. Since the nutritional requirements of the organisms vary, some strains may fail to grow or grow poorly on this medium.

Warranty

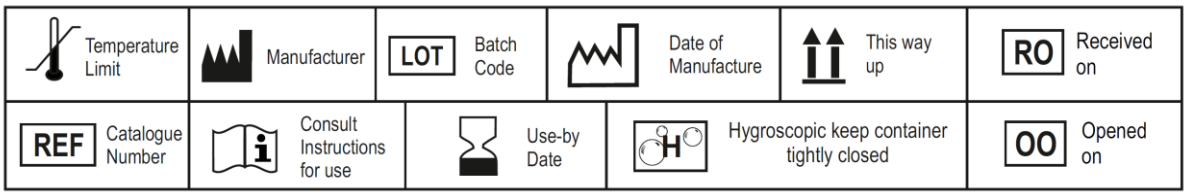
This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
2. Mallmann W. C. and Darby C. W., 1941, Am. J. Public Health, 31:127
3. Cowls P. B., 1938, J. Am. Water Works Assoc., 30:979.
4. International Organization for Standardization (ISO), 1991, Draft ISO/DIS 4831.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201120130100	Dehydrated Culture Media	100 g
201120130500	Dehydrated Culture Media	500 g
203120380010	Ready Prepared Tube	25 x 10 mL



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Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.