

## 61749 Lauryl sulfate Broth (Lauryl Casein peptone Broth)

Selective medium acc. to Mallmann and Darby (1941) for the presumptive testing for coliforms and their selective enrichment in the examination of water, dairy products and foodstuffs.

### Composition:

Ingredients	Grams/Litre
Casein peptone	20.0
Lactose	5.0
Dipotassium hydrogen phosphate	2.75
Potassium dihydrogen phosphate	2.75
Sodium lauryl sulfate	0.1
Sodium chloride	5.0
Final pH 6.8 +/- 0.2 (at 25°C)	

Prepared Broth becomes cloudy if stored at 2-8°C, but it should get cleared at room temperature. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

### Directions :

Dissolve 35.6 g in 1 litre distilled water. Distribute to convenient flasks or dispense 10 ml into each test-tubes containing inverted 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. Incubate at the wished temperature for 18-24 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:

Casein hydrolysate provides the nitrogen, carbon compounds, vitamins and amino acids. Lactose is the fermentable sugar. Sodium lauryl sulphate inhibits organisms other than coliforms. Bile salts inhibit gram-positive bacteria especially bacilli and faecal Streptococci. Sodium Chloride maintains the osmotic balance of the medium. Potassium phosphates control the pH during fermentation of lactose. Lactose-positive bacteria metabolize lactose with gas formation, within 24 hour or less is a presumptive evidence of the presence of coliform bacteria.

After inoculation, incubate the tubes at 37°C for 24-48 hours. For every tube showing fermentation (primary fermentation), inoculate two tubes of Lauryl Tryptose Broth from the tube showing primary fermentation and incubate these tubes at 37°C and 44°C respectively. If there is fermentation in the tube incubated at 44°C after 8 to 24 hours, perform indole test by adding Kovac's reagent (Cat. No. 60983). A positive indole test in a broth tube showing gas production at 44°C indicates the presence of Escherichia coli. 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.



Cultural characteristics after 18-24 hours at 35°C.

Organisms (ATCC)	Growth	Gas formation	Indole test (44°C)
<i>Enterobacter aerogenes</i> (13048)	+++	+	-
<i>Escherichia coli</i> (25922 and 11775)	+++	+	+
<i>Salmonella typhimurium</i> (14028)	+++	-	-
<i>Staphylococcus aureus</i> (25923)	-	-	-
<i>Enterococcus faecalis</i> (29212)	-	-	-

#### References:

1. A.E. Greenberg, R.R.Trussell, L.S. Clesceri (Eds.), Standard Methods for the Examination of Water and Wastewater, 16<sup>th</sup> ed., APHA Washington, D.C. (1985)
2. M. Speck (Ed.), Compendium of Methods for the Microbiological Examination of Foods, 2<sup>nd</sup> ed., APHA, Washington, D.C. (1984)
3. J. Cows, Am. Water Werks Association, 30, 979 (1938)
4. International Organization for Standardization (ISO) , Draft ISO/DIS 4831 (1991)
5. W.L. Mallmann, C.W. Darby, Am. J. Pbl. Health 31, 127 (1941)

#### 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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