

Lauryl Sulfate Broth

Selective culture medium used as a presumptive test for coliform bacteria and for the selective enrichment of coliform organisms in the analysis of water, according to MALLMANN and DARBY (1941).

This medium complies with the APHA Recommendations for Water Examination (1998) and the ISO 5541-2 (1996) for milk and milk products.

Mode of Action

The high nutrient quality and the presence of phosphate buffer in this medium ensure rapid growth and increased gas production of even "slowly lactose-fermenting" coliform bacteria. Gas formation can be detected by using fermentation tubes. The lauryl sulfate largely inhibits the growth of undesired bacteria.

Typical Composition (g/litre)

Tryptose 20.0; lactose 5.0; sodium chloride 5.0; sodium lauryl sulfate 0.1; di-potassium hydrogen phosphate 2.75; potassium dihydrogen phosphate 2.75.

Preparation

Suspend 35.6 g/litre or more, dispense into test tubes fitted with DURHAM tubes, autoclave (15 min at 121 °C).

pH: 6.8 ± 0.2 at 25 °C.

The prepared broth is clear and yellowish-brown.

Inoculum ml	Amount of Medium in Tube ml	Volume of Inoculum ml	Dehydrated Lauryl Sulfate Broth Required g/L	Broth Concentration
1	10 or more	11 or more	35.6	1-fold
10	10	20	71.2	2-fold
10	20	30	53.4	1.5-fold
10	10	30	106.8	3-fold
100	50	150	106.8	3-fold
100	35	135	137.1	3.85-fold
100	20	120	213.6	6-fold

Experimental Procedure and Evaluation

See 7661 Lactose Broth.

Incubation: up to 48 h at 35 °C (or 30 °C) aerobically.

Literature

American Public Health Association, American Water Works Association and Water Pollution Control Federation: Standard Methods for the Examination of Water and Wastewater, 20th ed., Washington, 1998.

HAJNA, A.A., a. PERRY, C.A. Comparative study of presumptive and confirmative media for bacteria of the coliform group and for fecal Streptococci. – *Am. J. Publ. Health*, 33; 550-556 (1943).

MALLMANN, W.L., a. DARBY, C.W.: Use of a lauryl sulfate tryptose broth for the detection of coliform organisms. – *Am. J. Publ. Health*, 31; 127-134 (1941).

International Standardization Organization: Milk and milk products – Enumeration of coliforms. Part 2: Most probable number technique at 30 °C. *ISO/CD 5541-2 (1996)*.

Ordering Information

Product	Merck Cat. No.	Pack size
Lauryl Sulfate Broth	1.10266.0500	500 g

Quality control

Test strains	Growth	Gas formation
Escherichia coli ATCC 25922	good	+
Escherichia coli ATCC 8739	good	+
Citrobacter freundii ATCC 43864	good	+
Staphylococcus aureus ATCC 25923	none / poor	-
Enterococcus faecalis ATCC 19433	fair / very good	-
Aeromonas hydrophila ATCC 7966	unlimited	-
Aeromonas sobria Linx 16	unlimited	- / poor