

Also known as

LST

Specification

Liquid medium used for the detection and enumeration of coliform bacteria, according to IDF-FIL 73B and ISO standards.

Formula * in g/L

Tryptose	20.00
Sodium lauryl sulphate	0.10
Lactose	5.00
Dipotassium phosphate	2.75
Potassium dihydrogenphosphate	2.75
Sodium chloride	5.00

Final pH 6.8 ±0.2 at 25 °C

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Dissolve 35,6 g of powder in 1 L of distilled water. Distribute into tubes or containers with inverted Durham tubes (for gas detection). Sterilize at 121°C for 15 minutes. For double concentration medium, dissolve 71,2 g/L and proceed as indicated above.

Description

Lauryl sulfate broth is used for the MPN Presumptive Test of coliforms in water and sewage, confirmatory test of lactose fermentation with gas production for milk and detection of coliforms in food.

The high nutrient quality and the presence of phosphate buffer in this medium ensure rapid growth and increased gas production, even by slow lactose-fermenting coliforms.

Indol production is observed by adding a few drops of Kovacs' Reagent to the broth (with or without previous extraction) and shaking gently. Formation of a red ring indicates indol production.

This medium can be used as a presumptive broth for *E. coli* (by fluorescent reaction) if, before sterilization, MUG is added.

Technique

If the volume of sample is substantial, reconstitute the medium such that the final concentration remains normal.

Incubate à 37 °C for 24-48 hours. Lactose fermentation is shown by the appearance of gas in the Durham tubes, indicating the presence of coliform bacteria.

Verification can be done by the isolation and identification of the coliforms on an appropriate medium.

Quality control
Incubation temperature: 37 °C ± 1

Incubation time: (24-48) ±2h

Inoculum: ≤100 CFU. min. 50 CFU (productivity)/ 10⁴-10⁶ CFU (selectivity), according to ISO 11133:2014/Amd 1:2018 & Amd 2:2020

Microorganism
Growth
Remarks

<i>Enterococcus faecalis</i> ATCC® 29212	Inhibited	-
<i>Enterococcus faecalis</i> ATCC® 19433	Inhibited	-
<i>Escherichia coli</i> ATCC® 25922	Good	Gas (+)
<i>Escherichia coli</i> ATCC® 8739	Good	Gas (+)
<i>Citrobacter freundii</i> ATCC® 43864	Good	Gas (+) 30 ±1°C

References

- APHA AWWA WPCF (1995) Standard Methods for the examination of water and wastewater. APHA. Washington.
- DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Food. 4th ed. APHA. Washington.
- FDA (Food and Drug Administrations) (1998) Bacteriological Analytical Manual. 8th ed. Revision A. AOAC International Gaithersburg. MD.
- FIL IDF Standard 73B (1998) Milk and milk products. Enumeration of coliforms. IDF. Brussels.
- HORWITZ, W. (2000) Official methods of Analysis. 17th ed. AOAC International. Gaithersburg. MD.
- ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- ISO 4831 Standard (1991) General guidance for the enumeration of coliforms - MPN technique.
- ISO 7251 Standard (1993) General guidance for enumeration of *E.coli* by MPN technique.
- MARSHALL R.T. (1992) Standard Methods for the examination of dairy products. 16th ed. APHA. Washington.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 °C to 30 °C).