LAURYL SULFATE BROTH (7142)

Intended Use
Lauryl Sulfate Broth is used for the detection of coliform bacteria in water and wastewater.

Product Summary and Explanation
The coliform group of bacteria includes aerobic and facultative anaerobic, gram-negative, non-sporeforming bacilli that ferment lactose and form acid and gas at 35°C within 48 hours.[1] Members of the *Enterobacteriacae* comprise the majority of this group, but organisms such as *Aeromonas* spp. may also be included. Procedures to detect and confirm coliforms are used in testing water, foods, dairy products, and other materials.[1-4]

Lauryl Sulfate Broth, also referred to as Lauryl Tryptose Broth, is prepared according to the formula of Mallmann and Darby.[5] During their investigation, Sodium Lauryl Sulfate produced the best results for inhibition of organisms other than coliforms.[5] Lauryl Sulfate Broth, abbreviated as LSB, is used in the presumptive phase of the Standard Total Coliform Fermentation Technique in the examination of water,[2] and coliform detection of foods.[3,4,6]

Principles of the Procedure
Enzymatic Digest of Casein provides nitrogen, vitamins, minerals, and amino acids in Lauryl Tryptose Broth. Lactose is the fermentable carbohydrate for coliforms. Potassium Phosphates are the buffering agents, and Sodium Chloride is used to maintain the osmotic balance of the medium. Sodium Lauryl Sulfate is the selective agent used to inhibit non-coliform organisms.

Formula / Liter
Enzymatic Digest of Casein ..... 20 g
Lactose ..... 5 g
Sodium Chloride ..... 5 g
Monopotassium Phosphate ..... 2.75 g
Disodium Phosphate..... 2.75 g
Sodium Lauryl Sulfate..... 0.1 g
Final pH: 6.8 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions
1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions
1. Dissolve 35.6 g of the medium in one liter of purified water.
2. Prepare double strength broth for evaluating 10 mL samples.
3. Distribute into tubes containing inverted fermentation Durham tubes. Autoclave at 121°C for 15 minutes.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and white.

Prepared Appearance: Prepared medium is yellow to gold and clear to trace hazy.

Expected Cultural Response: Cultural response in Lauryl Sulfate Broth at 35°C after 24 hours incubation.

Microorganism	Response	Reaction (Gas)
Escherichia coli ATCC® 25922	good growth	positive
Proteus mirabilis ATCC® 12453	good growth	negative
Staphylococcus aureus ATCC® 25923	inhibited	----

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Follow the methods and procedures for the detection of coliform organisms as described in standard methods. [1-4,6]

Results

After incubation of the tubes at 35°C for 24 hours, examine for turbidity and gas production. If no gas has formed in the inverted tube, reincubate and reexamine after 48 hours.[2,3]

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

Lauryl Sulfate Broth	**Code No.**	**7142A**	**500 g**
		7142B	**2 kg**
		7142C	**10 kg**

References

1. **Marshall, R. T. (ed.).** 1992. Standard methods for the examination of dairy products, 16th ed., American Public Health Association, Washington, D.C.
2. **Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.).** 1995. Standard methods for the examination of water and wastewater, 19th ed. American Public Health Association, Washington, D.C.
3. **Vanderzant, C., and D. F. Splittstoesser (eds.).** 1992. Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.
4. **U. S. Food and Drug Administation.** 1995. Bacteriological analytical manual, 8th ed., AOAC International, Gaithersburg, MD.
5. **Mallmann, W. L., and C. W. Darby.** 1941. Uses of a lauryl sulphate tryptose broth for the detection of coliform organsisms. Am J. Public Health. **31:**127.
6. **Cunnif, P. (ed.).** 1995. Official Methods of Analysis AOAC International, 16th ed. AOAC International, Gaithersburg, MD.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (410)780-5120 or fax us at (410)780-5470.