LAURYL TRYPTOSE BROTH (7324)

**Intended Use**
Lauryl Tryptose Broth is used for the detection of coliform bacteria in water and wastewater in a laboratory setting. Lauryl Tryptose Broth is not intended for use in the diagnosis of disease or other conditions in humans.

**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. Members of the *Enterobacteriaceae* 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.

Lauryl Tryptose Broth, also referred to as Lauryl Sulfate Broth, is prepared according to the formula of Mallmann and Darby. Their investigation found that buffered tryptose lactose broth permitted “slow lactose fermenters” to increase gas production faster. Sodium Lauryl Sulfate produced the best results for inhibition of organisms other than coliforms. Lauryl Tryptose Broth, abbreviated as LTB, is used in the presumptive phase of the Standard Total Coliform Fermentation Technique in the examination of water, and coliform detection of foods.

**Principles of the Procedure**
Tryptose provides nitrogen, vitamins, minerals, and amino acids in Lauryl Tryptose Broth. Lactose is the fermentable carbohydrate for coliforms. 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**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tryptose</td>
<td>20 g</td>
<td>Provides nitrogen, vitamins, minerals, and amino acids.</td>
</tr>
<tr>
<td>Lactose</td>
<td>5 g</td>
<td>Fermentable carbohydrate for coliforms.</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>5 g</td>
<td>Maintains osmotic balance.</td>
</tr>
<tr>
<td>Monopotassium Phosphate</td>
<td>2.75 g</td>
<td>Buffering agent.</td>
</tr>
<tr>
<td>Disodium Phosphate</td>
<td>2.75 g</td>
<td>Buffering agent.</td>
</tr>
<tr>
<td>Sodium Lauryl Sulfate</td>
<td>0.1 g</td>
<td>Selective agent.</td>
</tr>
<tr>
<td><strong>Final pH</strong>:</td>
<td>6.8 ± 0.2 at 25°C</td>
<td>Standard pH for coliform detection.</td>
</tr>
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</table>

Formula may be adjusted and/or supplemented as required to meet performance specifications.

**Precautions**
1. For Laboratory Use Only.
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.
4. Autoclave at 121°C for 15 minutes.

**Quality Control Specifications**
**Dehydrated Appearance**: Powder is homogeneous, free flowing, and off-white to light beige.

**Prepared Appearance**: Prepared medium is yellow to gold and clear to trace hazy.
Expected Cultural Response: Cultural response in Lauryl Tryptose Broth incubated at 35 ± 2°C and examined for growth after 18 - 48 hours.

<table>
<thead>
<tr>
<th>Microorganism</th>
<th>Approx Inoculum (CFU)</th>
<th>Growth</th>
<th>Reaction (Gas)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em> ATCC® 25922</td>
<td>10 - 300</td>
<td>Good to excellent</td>
<td>Positive</td>
</tr>
<tr>
<td><em>Salmonella typhimurium</em> ATCC® 14028</td>
<td>10 - 300</td>
<td>Good to excellent</td>
<td>Negative</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em> ATCC® 25923</td>
<td>$10^3$</td>
<td>Partial to complete inhibition</td>
<td>Negative</td>
</tr>
</tbody>
</table>

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, reinoculate and reexamine after 48 hours. 2,3 A positive presumptive test for coliform organisms is a turbid broth, accompanied by gas production (bubbles) in the Durham tube. A negative test is no growth and/or no gas production after 48 hours.

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.

Limitations of the Procedure
1. Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Turbidity alone is not indicative of a positive test.
3. Lauryl Tryptose Broth may form a precipitate when stored at refrigerated temperatures. This precipitate dissipates upon warming to room temperature.

Packaging
Lauryl Tryptose Broth Code No. 7324A 500 g 7324B 2 kg 7324C 10 kg

References

Technical Information
Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.