LACTOSE BROTH (7141)

Intended Use
Lactose Broth is used for the cultivation of *Salmonella* and coliform bacteria from food, dairy, and water products in a laboratory setting. Lactose Broth is not intended for use in the diagnosis of disease or other conditions in humans.

Product Summary and Explanation
Lactose Broth is frequently used as a pre-enrichment medium when testing foods and dairy products for *Salmonella* spp. In dried or processed foods, *Salmonella* species may be sublethally injured and in low numbers. The presence of other bacteria as well as components of the food sample may hinder growth and recovery of *Salmonella*. Pre-enrichment in a nonselective medium such as Lactose Broth allows for repair of cell damage, dilutes toxic or inhibitory substances, and provides a nutritional advantage to *Salmonella* over other bacteria. Lactose Broth is widely used and is included in many procedures for testing foods, dairy products and other materials.

Lactose Broth is also used for the detection of coliform organisms in water, dairy products, and other materials.

Principles of the Procedure
Enzymatic Digest of Gelatin and Beef Extract provide the carbon and nitrogen sources for general growth requirements in Lactose Broth. Lactose is a carbohydrate source. Fermentation of lactose is demonstrated by the production of gas.

Formula / Liter
<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enzymatic Digest of Gelatin</td>
<td>5 g</td>
</tr>
<tr>
<td>Beef Extract</td>
<td>3 g</td>
</tr>
<tr>
<td>Lactose</td>
<td>5 g</td>
</tr>
</tbody>
</table>

Final pH: 6.9 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution
1. For Laboratory Use Only.

Directions
1. Dissolve 13 g of the medium in one liter of purified water.
2. Mix thoroughly.
3. Distribute into test tubes containing Durham tubes.
4. Autoclave at 121°C for 15 minutes.

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

Prepared Appearance: Prepared medium is pale to light yellow and clear with no to light precipitate.

Expected Cultural Response: Cultural response in Lactose Broth at 35 ± 2°C and examined for growth after 1 – 2 days incubation.

<table>
<thead>
<tr>
<th>Microorganism</th>
<th>Approx. Inoculum (CFU)</th>
<th>Expected Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Enterococcus faecalis</em> ATCC® 19433</td>
<td>10 - 300</td>
<td>Good, Negative</td>
</tr>
<tr>
<td><em>Escherichia coli</em> ATCC® 25922</td>
<td>10 - 300</td>
<td>Good, Positive</td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae</em> ATCC® 13883</td>
<td>10 - 300</td>
<td>Good, Positive</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em> ATCC® 27853</td>
<td>10 - 300</td>
<td>Poor to Fair, Negative</td>
</tr>
<tr>
<td><em>Salmonella typhimurium</em> ATCC® 14028</td>
<td>10 - 300</td>
<td>Good, Negative</td>
</tr>
</tbody>
</table>

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

Lactose Broth is used in the pre-enrichment phase of the preparation of food samples for isolation of *Salmonella* spp. Consult appropriate references for specific procedures for each type of material being tested.¹⁻⁴

1. Transfer a 25 g or 25 mL sample of test material into a container. Add 225 mL of sterile Lactose Broth. Mix as necessary to make a homogeneous suspension. Incubate at 35°C for 24 hours.
2. Transfer 1 mL of suspension to appropriate enrichment broths, such as Tetrathionate Broth and Selenite Cystine Broth. Incubate at 35°C for 24 hours.
3. Transfer a loopful of suspension to appropriate selective agar media, such as Hektoen Enteric Agar, XLD Agar and Bismuth Sulfite Agar. Incubate at 35°C for 24 hours.

**Results**

Pre-enrichment, selective enrichment and selective plating increase the likelihood of isolating *Salmonella* from foods and other materials.

**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 Procedures**

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

**Packaging**

<table>
<thead>
<tr>
<th>Lactose Broth</th>
<th>Code No.</th>
<th>7141A</th>
<th>500 g</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>7141B</td>
<td>2 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7141C</td>
<td>10 kg</td>
</tr>
</tbody>
</table>

**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.