HiEncap™ Luria Broth

HiEncap™ Luria Broth is recommended for the cultivation and maintenance of recombinant strains of *Escherichia coli*. Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein enzymic hydrolysate</td>
<td>10.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>5.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions

Each capsule contains 10 gms of medium. Suspend 1 capsule in 500ml (2 capsules in 1000ml) distilled or purified water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15lbs pressure (121°C) for 15 minutes. Dispense as desired.

Principle And Interpretation

Luria Broth is one of the many modifications, suggested by different authors, of the original formulation of Luria (1). This medium is generally used for molecular and genetic studies, because of its nutritive capacity and simple composition, which can be easily altered as per specific requirements. Luria Broth is the modification of the original formulation of Luria, as described by Lennox (2). Addition of glucose helps to prepare the complete medium formulated by Lennox. Luria Broth contains half the concentration of sodium chloride than in Luria Broth, Miller (3). Therefore as per choice, the sodium chloride concentration can be altered.

Luria Broth is used for the cultivation and maintenance of recombinant strains of *E. coli*, originally derived from *E. coli* strain K12, deficient in B vitamin production. These stains are specifically mutated to create an auxotrophic strain, unable to grow on a nutritionally deficient medium.

Luria Broth is a nutritionally rich medium due to the presence of casein enzymic hydrolysate and yeast extract. This allows the recombinant strains of *E. coli* to grow more rapidly since all the nutrients and essential growth nutrients required by these strains are readily available to them and they dont need to synthesize it themselves including B-vitamin (5). Sodium chloride maintains the osmotic equilibrium.

Refer appropriate references for standard procedures (3, 4, 5).

Quality Control

**Appearance**
Gelatin capsule containing, cream to yellow coloured granular medium

**Quantity**
Each capsule contains 10 grams of medium sufficient for 500ml media.

**Colour and Clarity of prepared medium**
Yellow to amber coloured clear solution in tubes

**Reaction**
Reaction of 2.0% w/v aqueous solution at 25°C. pH: 7.0±0.2

**pH**
6.80-7.20

**Cultural Response**
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.
<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cultural Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli ATCC 23724</em></td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td><em>Escherichia coli ATCC 25922</em></td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td><em>Escherichia coli DH5 alpha MTCC 1652</em></td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
</tbody>
</table>

**Storage and Shelf Life**
Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

**Reference**
2. Lennox E. S., 1955, Transduction of Linked Genetic Characters of the host by bacteriophage P1., Virology, 1:190.
3. Miller, 1972, Experiments in Molecular Genetics, Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

Revision : 00 / 2014