HiEncap™ Luria Broth Base, Miller's Modification

HiEncap™ Luria Broth Base, Miller’s modification is used for the cultivation and maintenance of recombinant strains of *Escherichia coli* with or without addition of glucose.

**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>0.500</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 15.5 gms of medium. Suspend 1 capsule in 1000 ml distilled or purified water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. If desired add 20% v/v glucose solution i.e 5 ml for 500 ml or 10 ml for 1000 ml media. Mix thoroughly and pour into sterile test tubes or flasks.

**Principle And Interpretation**

This medium is based on original Luria broth formula described by Miller for the growth and maintenance of *E.coli* strains used in molecular microbiology (1). Luria broth Base, Miller is a nutritionally rich medium recommended for growth of pure cultures of recombinant strains. *E.coli* is grown in late log phase in LB medium. Some plasmid vectors may replicate to high copy numbers without selective amplification. Some vectors do not replicate so freely, and need to be selectively amplified. Chloramphenicol can be added to inhibit host synthesis and as a result prevent replication of the bacterial chromosome. (2)

Luria Broth Base, Miller’s modification contains one tenth and one twentieth the sodium chloride level of the Lennox and Miller formulations of LB Agar respectively(1,2,3). This helps the user to select the optimal salt concentration for a specific strain. The medium may be aseptically supplemented with glucose, if desired.

Casein enzymic hydrolysate provides peptides and peptones while Vitamin B complex is provided by yeast extract. Sodium chloride provides sodium ions for membrane transport and also maintains the osmotic equilibrium of the medium.

**Quality Control**

**Appearance**
Gelatin capsule containing cream to yellow coloured granular media

**Colour and Clarity of Prepared Medium**
Yellow to amber coloured , clear to slightly opalescent solution

**Quantity**
Each capsule contains 15.5 grams of medium sufficient for 1000 ml media

**Reaction**
Reaction of 1.55% 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 .

**Cultural Response**

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
</table>

Please refer disclaimer Overleaf.
Escherichia coli ATCC 23724 50-100 luxuriant
Escherichia coli ATCC 25922 50-100 luxuriant
Escherichia coli DH5 alpha MTCC 1652 50-100 luxuriant

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

Reference
3. Lennox E.S. 1955, Transduction of Linked Genetic Characters of the host by bacteriophage P1., Virology, 1:190.

Disclaimer:
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