



## Luria Broth Base, Miller's Modification

M1725

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\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Yeast extract	5.000
Sodium Chloride	0.500
Final pH ( at 25°C)	7.0±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 15.5 grams in 1000 ml distilled water. Heat if necessary 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 10 ml of 20% glucose solution. 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

Cream to yellow homogeneous free flowing powder

#### Colour and Clarity of Prepared Medium

Yellow to amber coloured clear to slightly opalescent solution

#### 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

Organism	Growth	Inoculum (CFU)
<b>Cultural Response</b>		
<i>Escherichia coli</i> ATCC 23724	luxuriant	50-100
<i>Escherichia coli</i> ATCC 25922	luxuriant	50-100

*Escherichia coli* DH5 *alpha* luxuriant 50-100  
MTCC 1652

### 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

1. Miller ,J.H. 1772.Experiments in molecular genetics. Cold spring Harbor Laboratory, Cold spring Harbor, New York.
2. Sambrook, J., E.F. Fritsch and T. Maniatis. 1989.Molecular cloning: A laboratory manual, 2nd ed., Cold Spring Harbor Laboartory, Cold Spring Harbor, New York.
3. Lennox E.S. 1955, Transduction of Linked Genetic Characters of the host by bacteriophage P1., Virology, 1:190.

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