

Luria Broth

G575

Recommended for the cultivation and maintenance of recombinant strains of *Escherichia coli*.

Composition**:

Ingredients	Grams/Litre
Tryptone	10.000
Yeast extract	5.000
Sodium chloride	5.000
Final pH (at 25°C)	7.0±0.2

** Formula adjusted, standardized to suit performance parameters

Directions:

Suspend 20.0 grams in 1000 ml purified distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle and Interpretation:

Luria Broth is one of the many modifications, suggested by different authors, of the original formulation of Luria (4). It is the modification of the original formulation of Luria, as described by Lennox (5). Luria Broth contains half the concentration of sodium chloride than in Luria Broth, Miller (6). Therefore, as per choice, the sodium chloride concentration can be altered.

Luria Broth is a nutritionally rich medium due to the presence of tryptone 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 don't need to synthesize it themselves including B-vitamin (1). Sodium chloride maintains the osmotic equilibrium.

Luria broth is a widely used and versatile medium in molecular biology, especially for *Escherichia coli*. It's essential for cultivating and maintaining recombinant *E. coli* strains, including those specifically engineered as auxotrophs for genetic studies. 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.

Quality Control

- **Appearance of Powder:** Cream to yellow homogeneous free flowing powder
- **Colour and Clarity:** 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:** 7.0±0.2
- **Cultural Response:** Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours
- **Specimen:** Recombinant strains of *E. coli*

Organisms	Inoculum (CFU)	Growth
<i>Escherichia coli</i> ATCC 23724	50 - 100	good - luxuriant
<i>Escherichia coli</i> ATCC 25922	50 - 100	good - luxuriant
<i>Escherichia coli</i> DH5 alpha MTCC 1652	50 - 100	good - luxuriant

- **Molecular Biology applications:** Luria Broth has been tested for growth of recombinant *E. coli* cultures, plasmid DNA extraction and protein gene expression studies.

Storage and Shelf-life:

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Applications:

Luria Broth can be used for the growth of recombinant *E. coli* cultures containing plasmids with selective markers for applications such as Transformation, Cloning, Bacterial gene expression and many other downstream applications.

Disposal:

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).









Warning and Precautions:

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

References:

1. Ausubel F. M., Brent R., Kingston R. E., Moore D. D., Seidman J. G., Smith J. A. and Steuhl K., (Eds.), 1994, Current Protocols in Molecular Biology, Vol. I, Greene Publishing Associates, Inc. Brooklyn, N.Y.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
4. Luria S. E. and Burrous J. W., 1957, J. Bacteriol. 74: 461- 476
5. Lennox E. S., 1955, Transduction of Linked Genetic Characters of the host by bacteriophage P1., Virology, 1:190.
6. Miller, 1972, Experiments in Molecular Genetics, Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.
7. Sambrook J., Fritsch E. F., and Maniatis T., 1989, Molecular Cloning: A Laboratory Manual, 2nd Ed., Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y

Symbols:

	Manufacturer		Do not use if package is damaged
	Batch code		Temperature limit
	Date of manufacture (YYYY-MM)		Consult instructions for use
	Use-by date (YYYY-MM)		Catalogue number

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Disclaimer :

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