

Technical Information

Luria Broth

Product Code: DM 1575

Application: - Luria Broth is recommended for the cultivation and maintenance of recombinant strains of *Escherichia coli*

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	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

Principle & Interpretation

Luria broth 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. This media is the modification of the original formulation of Luria ⁽¹⁾ which has been 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⁾ which can be altered as per choice.

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.

Presence of casein enzymic hydrolysate and yeast extract make Luria Broth is a nutritionally rich medium. 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.

Methodology

Suspend 20 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Dispense as desired.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

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 range 6.80-7.20

Cultural Response/Characteristics

DM 1575: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.



Dehydrated Culture Media
Bases / Media Supplements

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

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8^o in sealable plastic bags for 2-5 days.

Further Reading

1. Luria S. E. and Burrous J. W., 1957, J. Bacteriol. 74: 461-476
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.
4. 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.
5. 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.

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