Luria Bertani Broth, Miller pH 7.0 (Miller Luria Bertani Broth, pH 7.0)

M2119

Intended use

Recommended for the cultivation and maintenance of recombinant strains of *Escherichia coli* and may be used for routine cultivation of not particularly fastidious microorganisms.

Composition**

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

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 25.0 grams in 1000 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Mix well. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Luria Bertani Broth, Miller is slightly different with double amount of sodium chloride as compared to original media described by Lennox for cultivation and maintenance of recombinant strains of *Escherichia coli* (1,2,3). The media is nutritionally rich for the growth of pure cultures of recombinant strains. Strains derived from *Escherichia coli K12* are deficient in Vitamin B synthesis which are further modified by specific mutation to create auxotrophic strains and are therefore unable to grow on nutritionally deficient media.

Tryptone provides peptides 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.

Type of specimen

Isolated Microorganisms

Specimen Collection and Handling

For Isolated Microorganisms samples follow appropriate techniques for handling specimens as per established guidelines (4,5). After use, contaminated materials must be sterilized by autoclaving before discarding.

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.

Limitations

1. Further biochemical testing is required for complete identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

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 2.5% 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.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 23724	50-100	luxuriant
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant
Escherichia coli DH5 alpha MTCC 1652	50-100	luxuriant

Key : (*) Corresponding WDCM numbers.

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.

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 comesinto contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Reference

1. Lennox E.S./ 1955, Transduction of Linked Genetic Characters of the host by bacteriophage P1., Virology, 1:190.
2. Miller, J.H.: Experiments in molecular genetics. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York (1972).
3. Sambrook, J., et al., Cold Spring Harbor Laboratory, Cold Spring Harbor, New York (1989).
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
5. 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.

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