

## LB Agar Miller (i23082)

For the cultivation of *E. coli* in fermentation and molecular genetic studies.

Industry: Molecular biology

## Principles & Uses

Luria Agar, based on Miller's LB Medium, is designed to support the growth and maintenance of *E. coli* strains, particularly those used in molecular microbiology. These strains, often derived from *E. coli* K12, are unable to produce vitamin B and have been further mutated to create auxotrophic strains, which cannot grow on nutritionally deficient media. The components of this medium play crucial roles: Tryptone supplies vital nitrogen, amino acids, minerals, and vitamins, while yeast extract contributes the B-group vitamins. Sodium chloride ensures proper electrolyte balance and membrane transport. Bacteriological agar acts as the solidifying agent.

For culturing bacteria contain plasmids in molecular biology tests, It can be further optimized by adjusting the salt concentration. The addition of 10 ml of sterile 20% glucose solution is recommended for better growth. Certain bacteriophages may require extra magnesium. This nutritionally rich medium supports the cultivation of pure cultures of recombinant strains, providing an essential tool for molecular biology research.

## Composition (gr/L)

Tryptone 10, Yeast Extract 5, Sodium Chloride 10, Agar 15.

Final pH at 25°C 7.0 ± 0.2

## Preparation from dehydrated Powder

Suspend 40 g in 1 Liter of distilled water. Sterilize by autoclaving at 121°C for 15 minutes.

## Quality Control

Dehydrated Appearance: Tan, free-flowing, homogeneous.

Prepared Appearance: Light amber, very slightly to slightly opalescent.

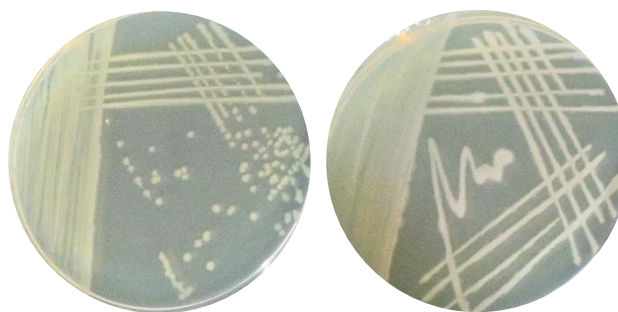
Reaction of 4.0% Solution at 25°C: pH 7.0 ± 0.2

## Cultural Response

Cultural response was observed after 18-48 hours of incubation at 35 ± 2°C.

Organism (ATCC*)	Recovery
<i>Escherichia coli</i> (25922)	Good
<i>Enterococcus faecalis</i> (19433)	Good
<i>Pseudomonas aeruginosa</i> (27853)	Good

\*ATCC is a registered trade mark of the American Type Culture Collection.



*E. coli* (left) and *P. aeruginosa* (right) exhibit good growth on LB Agar, Miller. The background has been darkened to enhance colony visibility.

## Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.