

# LB Broth (Miller's LB Broth)

For *E.coli* in molecular genetics studies

## Products Description

Name :	<b>Luria LB Broth (modified Miller's LB Broth)</b> (minimal concentration of NaCl)	<b>Lennox LB Broth (modified Miller's LB Broth)</b>	<b>Luria LB Broth (Miller's LB Broth)</b> (twice the Lennox conc.of NaCl)
<b>Catalog Number :</b>	96381A, 500 g	T3752A, 500 g	N1398A, 500 g
<b>Formula in g/l :</b>	Tryptone 10.00 Yeast Extract 5.00 Sodium Chloride <b>0.50</b>	Tryptone 10.00 Yeast Extract 5.00 Sodium Chloride 5.00	Tryptone 10.00 Yeast Extract 5.00 Sodium Chloride <b>10.00</b>
<b>Final pH</b>	7.0 <sub>±0.2</sub> at 25°C	7.0 <sub>±0.2</sub> at 25°C	7.0 <sub>±0.2</sub> at 25°C
<b>Preparation of 1L of 1x Broth:</b>	15.5 g / L	20 g / L	25 g / L
<b>Storage</b>	Room temperature (2-25°C). Once opened keep powdered medium closed to avoid hydration.		

## Directions for use

The dehydrated medium should be homogeneous, free-flowing and beige in color. If there are any physical changes, discard the medium.

### Preparation

Suspend 15.5 / 20 / 25 grams (see table above) of the medium in one liter of distilled water .

Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution.

Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes.

Store at 4°C. The color of the prepared medium is clear amber, slightly opalescent.

### Technical information

These LB Broths are based on LB Medium described by Miller. LB stands for Lysogeny Broth – and, inexactly, for ‘Luria Bertani’. They are suitable for the growth and maintenance of Escherichia coli strains used in molecular microbiology procedures, and also Coliforms (non-selective).

**LB Broth (Lennox)** (Cat. T3752A) is a highly-referenced medium developed by Lennox for the growth and maintenance of pure culture of recombinant strains of *E. coli*. It is a nutritionally rich medium that contains all the nutritional requirements for *E.coli* strains. In the formula, Tryptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is source of vitamins, particularly the B group. Sodium chloride supplies essential electrolytes for transport and osmotic balance.

LB Broth (Lennox ) contains ten times the sodium chloride level of **Luria Broth (modified Miller’s LB Broth)** (Cat. 96381A) and a half of the level found in **Luria Broth (Miller’s LB Broth)** (Cat. N1398A). These allow selecting the optimal salt concentration medium for a specific strain. The low salt media (Luria, Lenox) are useful when used antibiotic are salt-sensitive.

Bacteria that contain plasmids tend to grow best in broth that has between 5 and 10 g of salt.

For a faster growth, the medium can be supplemented with 0.1% glucose or 0.4% glycerol.

## FT-N1398A

Various cofactors may also need to be added to the broth if working with certain types of bacteriophages.

For example, bacteriophage lambda requires an excess of magnesium in the broth to properly infect bacteria.

The cultivation in LB Broth allows the cells with an insert plasmid, to begin to express the genes on the transformed plasmid, including the antibiotic resistance gene. If the transformed E.coli are plated directly onto selective agar media (LB Agar containing antibiotic), fewer transformed colonies will appear per ml plated. Growing the transformed cells in LB broth will increase the number of transformed cells per ml. To select the bacteria with the plasmid, it is necessary to subcultivate an inoculum from LB Broth to a LB Agar plate with the antibiotic added.

The broths are qualified by microbiological test with different type cultures after incubation at a temperature of  $35 \pm 2^\circ\text{C}$  and observed after 18 - 24 hours.

## References –

- Bertani, G. (2004). Lysogeny at mid-twentieth century: P1, P2, and other experimental systems. J. Bacteriology. 186:595-600. PMID 14729683
- Bertani, G. (1951). Studies on lysogenesis. I. The mode of phage liberation by lysogenic Escherichia coli. J. Bacteriol. 62:293-300. PMID 14888646

## T3752A

- Atlas, R.M., L.C. Parks (1993) Handbook of Microbiological Media. CRC Press, Inc. London
- Lennox.(1955). Virology 1:190.
- Sambrook, Fritsch and Maniatis.(1989). Molecular cloning: a laboratory manual, 2nd ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y.

## N1398A

- The condensed protocols from molecular cloning: a laboratory manual/ Joseph Sambrook, David W .Russell 96381A
- Miller J. H.: Experiments in Molecular Genetics, Cold Spring Harbor Laboratory (1972).

## Related products

Same products but with including agar: see LB Agar [FT-N1398A](#) .

LB Agar (Miller) – T3749A (10g/L NaCl)

LB Agar (Lennox) T3750A – medium salt (5g/L NaCl)

LB Agar (Luria) T3748A – minimal salt (0.5g/L NaCl)

## Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.

Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : Uptima / Interchim; Hotline : +33(0)4 70 03 73 06

[Order on-line](#) or [Contact](#) your local distributor

**Disclaimer :** Materials from Uptima are sold **for research use only**, and are not intended for food, drug, household, or cosmetic uses. Uptima is not liable for any damage resulting from handling or contact with this product.