Lysogeny Broth (LB)

Steven Burgess

Abstract

Lysogeny broth (**LB**), a nutritionally rich medium, is primarily used for the growth of bacteria. The initialism is also commonly, albeit incorrectly, taken to mean **Luria broth**, **Lennox broth**, or **Luria-Bertani medium**. According to its creator Giuseppe Bertani, the abbreviation **LB** was actually intended to stand for **lysogeny broth**.[1] The formula of the **LB medium** was published in 1951 in the first paper of Bertani on lysogeny. In this article he described the modified single-burst experiment and the isolation of the phages P1, P2, and P3. He had developed the **LB medium** to optimize *Shigella* growth and plaque formation.[1][2]

LB media formulations have been an industry standard for the cultivation of *Escherichia coli* as far back as the 1950s.[3][4][5][6][7] These media have been widely used in molecular microbiologyapplications for the preparation of plasmid DNA and recombinant proteins. It continues to be one of the most common media used for maintaining and cultivating laboratory recombinant strains of*Escherichia coli*.[8] For physiological studies however, the use of LB medium is to be discouraged.[9]

There are several common formulations of LB. Although they are different, they generally share a somewhat similar composition of ingredients used to promote growth, including the following:

- Peptides and casein peptones
- Vitamins (including B vitamins)
- Trace elements (e.g. nitrogen, sulfur, magnesium)
- Minerals

Peptides and peptones are provided by tryptone. Vitamins and certain trace elements are provided by yeast extract. Sodium ions for transport and osmotic balance are provided by sodium chloride. Tryptone is used to provide essential amino acids to the growing bacteria, while the yeast extract is used to provide a plethora of organic compounds helpful for bacterial growth.

In his original 1951 paper, Bertani used 10 grams of NaCl and 1 gram of glucose per 1 L of solution; Luria in his 'L broth' of 1957 copied Bertani's original recipe exactly.[6] Recipes published later have typically left out the glucose.

From Wikipeida https://en.wikipedia.org/wiki/Lysogeny_broth

Citation: Steven Burgess Lysogeny Broth (LB). **protocols.io**
dx.doi.org/10.17504/protocols.io.fcrbiv6
Published: 23 Jul 2016

Protocol

Step 1.

Tryptone

AMOUNT
10 g Additional info:

Step 2.

Yeast Extract

AMOUNT
5 g Additional info:

Step 3.

NaCl

AMOUNT
10 g Additional info:

Step 4.

Distilled H_2O

AMOUNT
1 L Additional info:

NOTES
Steven Burgess 21 Jul 2016

Add up to 1L

Step 5.

Autoclave.

NOTES
Steven Burgess 21 Jul 2016

For LB agar add 1.5% (w/v) agar