

TECHNICAL DATA SHEET

Lysine Lactose Broth

Principle

Lysine Lactose Broth is formulated by Falkow (1985) is also named as Falkow Lysine Broth use for detection of lysine decarboxylase by means of a color reaction in enteric bacilli. The media is composed of peptone, yeast extract, dextrose, L-lysine hydrochloride, lactose and bromocresol purple. Peptone and yeast extract provides nitrogen, vitamins, minerals, amino acids and growth factors. Dextrose and lactose are carbon or energy source for the growth of microorganisms. L-lysine hydrochloride decarboxylated to form cadaverine. Bromo cresol purple and cresol red are the pH indicators. When dextrose is fermented by bacteria, the pH is lowered due to acid production, which changes the colour of the indicator from purple to yellow. Acid produced stimulates decarboxylase enzyme. Decarboxylation of lysine yields cadaverine in alkaline conditions, revert to purple colour. If the organisms do not produce decarboxylase enzyme, the colour of the medium remains yellow. The enteric bacilli produce acid in an initial due to lactose fermentation. While lactose non-fermenters produce acid from dextrose resulting in the formation of yellow colour. Subsequently L-Lysine is decarboxylated to form cadaverine resulting in an alkaline reaction and the broth reverts to purple colour.

Use: For the determination of lysine decarboxylase activity of lactose nonfermenting members of Enterobacteriaceae specially Salmonellae.

Contents*

Ingredients	Gram/Litre
Peptone	5.000
Yeast extract	3.000
Dextrose	1.000
L-lysine hydrochloride	5.000
Lactose	10.000
Bromcresol purple	0.020
pH at 25°C	6.8 ±0.2

* Formula adjusted for optimum performance and parameters

OXFORD LAB FINE CHEM LLP

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Regd Office: Unit no 12, 1st Floor,
Neminath Industrial Estate No.6,
Navghar, Vasai (East), Palghar - 410210.
Maharashtra, INDIA.

Tel: +91 250 2390032 / 2390989 / 2390990
Email: sales@oxfordlabchem.com /
info@oxfordlabchem.com
Web: www.oxfordlabchem.com



Directions: Dissolved 24.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely. Distribute 5.00 ml into the screw capped test tubes. Sterilize by autoclaving 15 lbs pressure (121°C) for 15 minutes. Allow to cool the tubes in an upright position and overlay with 2-3 ml of sterile mineral oil.

Specimens' types analyzed
Water and food products etc.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light beige to greenish yellow color free flowing, homogeneous powder
Reaction of 2.4 % solution	6.8 ±0.2 at 25 °C
pH	6.60-7.00
Color and clarity of ready medium	Purple color, clear slightly opalescent solution
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

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Different Microbial Response: Cultural characteristics observed after incubation at 33-37°C for 18-24 hours. (Inoculated tubes are overlayed with sterile mineral oil). Inoculum 50-100 CFU.

Organism	ATCC	Medium color	Lactose fermentation	Lysine decarboxylation
<i>Escherichia coli</i>	8739	Yellow	Positive reaction yellow color	Negative reaction, yellow color
<i>Salmonella typhimurium</i>	14028	Bluish purple	Negative reaction Blue purple	Positive reaction purple color
<i>Salmonella enteritidis</i>	13076	Bluish purple	Negative reaction Blue purple	Positive reaction, purple colour
<i>Proteus vulgaris</i>	13315	Bluish green	Negative reaction green blue	Delayed positive reaction bluish green

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

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