

TECHNICAL DATA SHEET

Lysine Decarboxylase Broth

Principle

Lysine Decarboxylase Broth is modification of Moeller decarboxylase broth (1954-55). The media is composed of peptone, yeast extract, dextrose, L-lysine hydrochloride and bromocresol purple. Peptone and yeast extract provides nitrogen, vitamins, minerals, amino acids and growth factors. Dextrose is 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. Dextrose non-utilizers will not show any change in the medium color. Use light inoculate and do not read the tests after 24 hours incubation, as some organisms require longer incubation time of up to 4 days.

Use: For distinguishing *Salmonella* serotype *Arizonae* from the Bethesda Ballerup group of *Enterobacteriaceae*.

Contents*

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

* Formula adjusted for optimum performance and parameters

Directions: Dissolved 14.00 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.

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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 1.4% 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 18-48 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours. (Inoculated tubes are overlayed with sterile mineral oil).

Organism	ATCC	Inoculum CFU	Color of medium
<i>Salmonella arizonae</i>	13314	50-100	Purple color, Positive reaction
<i>Klebsiella aerogenes</i>	13048	50-100	Purple color, Positive reaction
<i>Salmonella typhimurium</i>	14028	50-100	Purple color, Positive reaction
<i>Proteus vulgaris</i>	13315	50-100	Yellow color, negative reaction
<i>Proteus mirabilis</i>	12453	50-100	Yellow color, negative reaction
<i>Escherichia coli</i>	8739	50-100	Variable reaction

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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

1. American Public Health Association, (1978) *Standard Methods for the Examination of Dairy Products*, 14thEd., Washington
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), *Standard Methods for the Examination of Water and Waste water*, 23rd Ed., APHA, Washington, D.C.
3. Downes F. P. and Ito K., (Ed.), (2001), *Compendium of Methods for the Microbiological Examination of Foods*, 4th Ed., American Public Health Association, Washington, D.C.
4. Moeller, V. (1954). *Activity determination of amino acid decarboxylases in Enterobacteriaceae*. Acta Pathol. Microbiol. Scand. 34:102-111.
5. Moeller, V. (1954). *Distribution of amino acid decarboxylases in Enterobacteriaceae*. ActaPathol. Microbiol. Scand. 34: 259-277.
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