Lysine Decarboxylase Broth

Intended Use
Lysine Decarboxylase Broth is used for differentiating *Salmonella arizonae* from the Bethesda Ballerup group of *Enterobacteriaceae.*

Summary
Lysine Decarboxylase Broth is especially suited to study the decarboxylase reactions for members of *Enterobacteriaceae* other than *Klebsiella* and *Enterobacter.* Decarboxylase media were first described by Moeller for detecting lysine and ornithine decarboxylase and arginine dihydrolase. Falkow developed a lysine decarboxylase medium for the identification and differentiation of *Salmonella* and *Shigella.* Lysine Decarboxylase Broth is also recommended by APHA and other standard methods.

Principle
During the initial stages of incubation, following inoculation, fermentation of dextrose by the organisms leads to acid production, which causes a subsequent colour change of the bromocresol purple indicator to yellow. The acidic condition thus generated stimulates decarboxylase activity, which leads to decarboxylation of lysine to cadavarine. The alkaline conditions generated due to cadaverine production cause the bromocresol purple indicator (changed to yellow) to 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 colour. (Use light inocula and do not read the tests after 24 hours' incubation, as some organisms require longer incubation time of upto 4 days.)

Formula*

Ingredients	**g/L**
Peptone	5.0
Yeast Extract	3.0
Dextrose	1.0
L-Lysine Hydrochloride	5.0
Bromocresol Purple	0.02
Final pH (at 25°C)	6.8 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 14.02 g of the powder in 1000 mL purified / distilled water.
2. Heat, if necessary, to dissolve the powder completely.
3. Dispense 5 mL amount into screw-capped test tubes.
4. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
5. Cool the tubed medium in an upright position and overlay with 2-3 mL of sterile mineral oil.

Quality Control

Dehydrated Appearance: Light yellow to light green homogeneous, free flowing powder.
Prepared Appearance: Purple coloured, clear solution without any precipitate.
Cultural Response: Cultural characteristics is observed after an incubation at 35°C -37°C for 18 -24hours. (Inoculated tubes are overlayed with sterile mineral oil).

Organism (ATCC)	Lysine Decarboxylation
Citrobacter freundii (8090)	Variable reaction
Escherichia coli (25922)	Variable reaction
Klebsiella aerogenes (13048)	Positive reaction, purple colour
Klebsiella pneumoniae (13883)	Positive reaction, purple colour
Proteus mirabilis (25933)	Negative reaction, yellow colour
Proteus hauseri (13315)	Negative reaction, yellow colour
Salmonella Arizonae (13314)	Positive reaction, purple colour
Salmonella Paratyphi A (9150)	Negative reaction, yellow colour
Salmonella Typhi (6539)	Positive reaction, purple colour
Serratia marcescens (8100)	Positive reaction, purple colour
Shigella dysenteriae (13313)	Negative reaction, yellow colour

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Moeller V., 1954, Acta. Pathol. Microbiol. Scand., 34:102.
2. Moeller V., 1954, Acta. Pathol. Microbiol. Scand., 34:259.
3. Moeller V., 1955, Acta. Pathol. Microbiol. Scand., 36:158.
4. Falkow, 1958, Am. J. Clin. Pathol., 29:598.
5. Eaton A. D., Clesceri L. S., Rice E. W. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Waterm and Wastewater, 21st Ed., APHA, Washington, D.C.
6. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
7. Isenberg (Ed.), 1992, Clinical Microbiology Procedures Handbook, Vol. 1. American Society for Microbiology, Washington, D.C.
8. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.Data on file:
9. Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201120320500	Dehydrated Culture Media	500 g