

LYSINE DECARBOXYLASE MEDIUM (as per ISO)

TM 1830

For the biochemical confirmation of *Salmonella* species

Composition

Ingredients	Gms/Ltr.
Lysine monohydrate	5.00
Yeast extract	3.00
Dextrose	1.00
Bromo cresol purple	0.015

* Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 9.0gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Distribute 5 ml amount in screw - capped tubes. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool at room temperature prior to use.

Appearance: Purple colour, clear solution without any precipitate

pH (at 25°C): 6.8 ± 0.2

Principle

LYSINE DECARBOXYLASE MEDIUM (as per ISO) used for the biochemical confirmation of *Salmonella* species. Lysine Decarboxylase Medium was originally developed by Falkow. Yeast extract is a source of vitamins, particularly of the B-group. Dextrose is the fermentable carbohydrate. Bromocresol purple is the pH indicator. Lysine monohydrate is added to detect the production of the specific enzyme. When the medium is inoculated dextrose is fermented, the acid produced lowers the pH of the medium and changes the color of the indicator from purple to yellow. The bacteria that decarboxylate the Lysine monohydrate is decarboxylated to cadaverine, such as *Salmonella*, are identified by the presence of a purple- red colour due to elevation of the pH. A yellow colour after 24 hours indicates a negative result. The tubes are inoculated with the microorganism samples and incubated for 24 ± 3 hours at 37 ± 1°C.

Interpretation

Cultural characteristics observed after inoculating (10³CFU/ml), on incubation at 35 ± 1°C for 24 ± 3 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Lysine decarboxylase*
<i>Escherichia coli</i>	25922	10 ³	Variable	+/-
<i>Salmonella</i> serotype paratyphi	6539	10 ³	Good	+
<i>Salmonella</i> serotype Arizonae	13314	10 ³	Good	+
<i>Salmonella typhi</i>	6539	10 ³	Good	+
<i>Proteus vulgaris</i>	13315	10 ³	Inhibited	-

* Key: + = positive reaction (purple)

- = negative reaction (yellow)

+/- = variable

References

1. S. Falkow, Activity of lysine decarboxylase as an aid in the identification of Salmonellae and Shigellae, Am. J. Clin. Path. 29, 598-600. (1958).
2. Ewing Davis and Deaves. Studies in the Serratia Group. U.S. Dept. H.E.W.C.D.C. Atlanta, (1972).
3. Edwards and Ewing. Identification of Enterobacteriaceae, Burgess Publ. Co. Minneapolis, Minn. (1961).
4. **ISO 6579:2002.** Microbiology of food and animal feeding stuffs – Horizontal method for the detection of Salmonella spp.