

LYSINE DECARBOXYLASE BROTH
TM 169

For differentiating *Salmonella* serotype *arizonae* from the Bethesda Ballerup group of Enterobacteriaceae

Composition

Ingredients	Gms/Ltr.
Peptic digest of animal tissue	5.00
L- Lysine hydrochloride	5.00
Yeast extract	3.00
Dextrose	1.00
Bromo cresol purple	0.02

* 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 14gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Dispense in 5 ml amount into screw capped test tubes. Leave caps loose to allow gas exchange. Sterilize by autoclaving at 15psi (121°C) for 15 minutes. Close well after sterilization. Cool to tubed medium in an upright position. Inoculate the tubes and overlay with 2-3 ml of sterile mineral oil.

Appearance: Purple colour, clear solution without any precipitate

pH (at 25°C): 6.8 ± 0.2

Principle

LYSINE DECARBOXYLASE BROTH used for differentiating *Salmonella* serotype *arizonae* from the Bethesda Ballerup group of Enterobacteriaceae. Lysine Decarboxylase Broth was originally developed by Falkow. Peptic digest of animal tissue provides nitrogen, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group. Dextrose is the fermentable carbohydrate. Bromocresol purple is the pH indicator. Lysine 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. Further incubation period L- Lysine is decarboxylated to cadaverine, what change the pH to an alkaline condition and change the color of indicator to purple. Negative samples remain yellow. Some organisms needs up to 4 days for the lysine decarboxylase reaction.

Interpretation

Cultural characteristics observed after inoculating (10³CFU / ml), on incubation at 35 ± 2°C for 24 hours.

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

* 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.
Edwards and Ewing. Identification of Enterobacteriaceae, Burgess Publ. Co. Minneapolis, Minn. (1961).