

## LYSINE DECARBOXYLASE BROTH

Dehydrated medium used for identification of microorganisms, especially *enteric bacilli*, based on the decarboxylation of lysine

### TYPICAL FORMULA (g/L)

Peptone	5.0
Yeast Extract	3.0
Dextrose	1.0
L-Lysine	5.0
Bromcresol Purple	0.02
Final pH 6.8 ± 0.2	

### DESCRIPTION

LYSINE DECARBOXYLASE BROTH is used to detect and differentiate *Enterobacteria* from other microorganisms, based on lysine decarboxylation.

### PRINCIPLE

Peptones and yeast extract to supply the nitrogenous and other nutrients necessary to support bacterial growth. Dextrose is the fermentable carbohydrate. Bromocresol purple is pH indicator. When the medium is inoculated with a bacterium that is able to ferment dextrose, acids are produced that lower the pH of the medium and change the color of the indicator from purple to yellow. If the organism produces the lysine decarboxylase enzyme, the lysine in the medium is degraded to cadaverine. The production of cadaverine elevates the pH of the medium, changing the color of the indicator from yellow to purple or violet. If the organism does not produce the appropriate enzyme, the medium remains acidic (yellow).

### PREPARATION

Suspend 14 g of the powder in 1 litre of distilled water. Mix thoroughly. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Autoclave at 121 °C for 15 minutes.

### TECHNIQUE

Inoculate the broth media by transferring one or two colonies from the surface of a fresh culture with an inoculating loop or needle and mix to distribute the culture throughout the medium. Overlay the medium in each tube with 1 mL sterile mineral oil. Incubate the tubes with caps tightened at 35 ± 2 °C. Examine for growth and decarboxylase reactions after 18-24, 48, 72 and 96 hours before reporting as negative.

### INTERPRETATION OF RESULTS

A yellow color to the tube of media indicates a negative test (the organism does not produce the appropriate enzyme), a violet color indicates a positive test (alkaline). Examine for growth and decarboxylase reactions after 18-24, 48, 72 and 96 hours before reporting as negative.

### STORAGE

The powder is very hygroscopic: store the powder at 10-30 °C, in a dry environment, in its original container tightly closed until the expiry date indicated on the label or until signs of deterioration or contamination are evident.  
Store prepared media at 2-8 °C.

### WARNING AND PRECAUTIONS

The product is not classified as hazardous by current legislation and does not contain harmful substances in concentrations of ≥1%.  
The product is designed for *In vitro* diagnostic use and must be used only by properly trained operators.

### DISPOSAL of WASTE

Disposal of waste must be carried out according to national and local regulations in force.

### REFERENCES

1. Isenberg ed. (1992). Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.
2. Harmon, Kautter, Golden and Rhodehamel. (1995). In FDA bacteriological analytical manual, 8<sup>th</sup> ed. AOAC International, Gaithersburg, Md.
3. Clesceri, Greenberg and Eaton ed. (1998). Standard methods for the examination of water and wastewater, 20<sup>th</sup> ed. American Public Health Association, Washington, D.C.
4. Downes and Ito ed. (2001). Compendium of methods for the examination of water and wastewater, 20<sup>th</sup> ed. American Public Health Association, Washington, D.C.



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## PRODUCT SPECIFICATIONS

### NAME

LYSINE DECARBOXYLASE BROTH

### PRESENTATION

Dehydrated culture medium

### STORAGE

10-30°C

### PACKAGING

Code	Content	Packaging
610303	500 gr	500 gr of powder in plastic bottle
610303	100 gr	100 gr of powder in plastic bottle

### pH OF THE MEDIUM

6.8 ± 0.2

### USE

LYSINE DECARBOXYLASE BROTH is used to detect and differentiate *Enterobacteria* from other microorganisms, based on lysine decarboxylation.

### TECHNIQUE

Refer to technical sheet of the product.

### APPEARANCE of the MEDIUM

Dehydrated medium

Appearance: free-flowing, homogeneous

Colour: light beige

Prepared medium

Appearance: Purple, clear

Colour: Purple

### SHELF LIFE

4 years

### QUALITY CONTROL

- Control of general characteristics, label and print
- Sterility control

days at 25 ± 1°C, in aerobiosis

days at 36 ± 1°C, in aerobiosis

- Microbiological control

Inoculum for productivity: 10-100 UFC/ml

Inoculum for selectivity: 10<sup>4</sup>-10<sup>5</sup> UFC/ml

Inoculum for specificity: ≤ 10<sup>4</sup> UFC/ml

Incubation conditions: overlay the medium with 1ml of sterile mineral oil 35 ± 2 °C for 18-48 hours.

Microorganisms		Growth	Lysine decarboxylation
<i>Escherichia coli</i>	ATCC 25922	Good	+
<i>Salmonella typhi</i>	ATCC 6539	Good	+
<i>Salmonella paratyphi</i>	ATCC 9150	Good	-
<i>Proteus vulgaris</i>	ATCC 13315	Good	-
<i>Salmonella gallinarum</i>	ATCC 9240	Good	+
<i>Serratia liquifacies</i>	ATCC 27592	Good	(+) slow

### TABLE OF SYMBOLS

<b>LOT</b> Batch code	Temperature limitation	Manufacturer	Contains sufficient for <n> tests	<b>IVD</b> <i>In vitro</i> Diagnostic Medical Device
<b>REF</b> Catalogue number	Keep away from heat	Use by	Caution, consult accompanying documents	



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