

## LYSINE IRON AGAR

Differential medium for enterobacteria isolation.

### TYPICAL FORMULA (g/l)

Peptospecial	5.0
Glucose	1.0
L-Lysine Hydrochloride	10.0
Ferric Ammonium Citrate	0.5
Yeast Extract	3.0
Sodium Thiosulfate	0.04
Brom Cresol Purple	0.02
Agar	14.5

Final pH = 6.7 ± 0.2 at 25 °C.

### DIRECTIONS

Suspend 34.1 g of powder in 1 liter of distilled or deionized water. Heat to boiling until completely dissolved.  
Dispense into final tubes. Sterilize in autoclave at 121 °C for 15 minutes.  
Allow the medium to solidify in a position that provides a short slant and a deep butt.

### DESCRIPTION

LYSINE IRON AGAR is used for differentiating microorganisms, especially *Salmonella* (included lactose fermenting *S. Arizona*), based on lysine decarboxylation / deamination and H<sub>2</sub>S production. Lactose-fermenting salmonellae will produce pink colonies on lactose containing media.

### TECHNIQUE

Pick the center of a well-isolated colony from a fresh, pure culture with a needle and inoculate it by stabbing to the base of the butt and streaking the slant.

Cap the tube loosely to ensure aerobic conditions. Incubate at 36 ± 1 °C for 18-24 hours.

Examine after 18-24 hours and 40-48 hours for growth and color change in the butt and the slant of the medium and blackening at the apex of the slant.

Lysine decarboxylase reaction results are:

Positive: purple (alkaline) butt, purple slant.

Negative: Yellow (acid) butt, purple slant.

Lysine deaminase reaction results are:

Positive: red slant.

Negative: purple slant.

Hydrogen sulphide reaction:

Positive: blackened medium at the apex of the slant.

### QUALITY CONTROL

#### Dehydrated medium

Appearance: free-flowing, homogeneous.

Color: beige.

#### Prepared medium

Appearance: very slightly opalescent without precipitate.

Color: purple.

Incubation conditions: 36 ± 1 °C for 18-48 hours.

Microorganism	ATCC	Butt	Slant	H <sub>2</sub> S
<i>Escherichia coli</i>	25922	purple	purple	-
<i>Salmonella typhimurium</i>	14028	purple	purple	+
<i>Klebsiella pneumoniae</i>	13883	purple	purple	-
<i>Citrobacter freundii</i>	8090	yellow	purple	+
<i>Proteus mirabilis</i>	25933	yellow	red	-

### STORAGE

The powder is very hygroscopic: store the powder at 10-30 °C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident.

Store prepared plates at 2-8 °C.



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#### REFERENCES

1. Edwards, P.R., and M.A. Fife. 1961. Appl. Microbiol. **9** : 478.
2. MacFadding, J.F. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, MD.

#### PRESENTATION

Product	REF	
LYSINE IRON AGAR (14.6 l)	610027	500 g
LYSINE IRON AGAR (2.9 l)	620027	100 g

#### TABLE OF SYMBOLS

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



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