PRODUCT INFORMATION

Product Type: Tubes

Cat No. TT152 - LYSINE IRON AGAR - SLANTED

Intended Use:

Lysine Iron Agar (LIA) is a differential medium primarily used for the identification and differentiation of enteric Gram-negative bacilli, especially within the *Enterobacteriaceae* family, based on their ability to decarboxylate or deaminate lysine and to produce hydrogen sulfide (H_2S).

Principles and uses:

Lysine decarboxylation (anaerobic, in butt): If bacteria possess lysine decarboxylase, they convert lysine to cadaverine, neutralizing acid from glucose fermentation and turning the butt purple.

Lysine deamination (aerobic, on slant): Some bacteria (e.g., *Proteus, Providencia*) deaminate lysine aerobically, producing a burgundy/red slant.

Glucose fermentation: Acidifies the butt, turning it yellow if no decarboxylation occurs.

Hydrogen sulfide production: Black precipitate forms if H_2S is produced, due to reaction with ferric ammonium citrate and sodium thiosulfate.

Interpretation of Results

Purple slant/yellow butt: Lysine decarboxylase negative.

Purple slant/purple butt: Lysine decarboxylase positive.

Red (burgundy) slant: Lysine deaminase positive.

Blackening: H_2S production.

- **Purple** color in the butt and/or slant indicates alkaline reactions (lysine decarboxylation).
- **Yellow** color in the butt indicates acidification (glucose fermentation without decarboxylation).
- **Burgundy/red** color on the slant indicates lysine deamination.
- **Black** precipitate indicates H_2S production

Bacteria able to decarboxylate lysine leave the medium purple; those producing H_2S cause blackening. Deamination leads to a burgundy/red slant.

Composition:

L-lysine: 10 g/L
Peptone: 5 g/L
Yeast extract: 3 g/L
Glucose (dextrose): 1 g/L
Ferric ammonium citrate: 0.5 g/L
Sodium thiosulfate: 0.04 g/L
Bromocresol purple (pH indicator): 0.02 g/L
Agar: 15 g/L

Storage: 15°-25°C
Package contents: 20 Tubes
Appearance: light purple clear, firm gel
pH Range: 6.5 - 6.9
Exp. Date: Printed on label and on the item.
Required materials not supplied: Laboratory equipment as required.

Warning and Precautions:

Warning and Precautions - For professional use only. Follow good microbiological lab practices while handling specimens and culture. Do not use Tubes if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration. Avoid freezing and overheating. The Tubes may be used / inoculated up to the expiration date and incubated for the recommended incubation times. After use and prior to discarding, specimen containers and all contaminated material, including the used culture media and contaminated culture containers, must be sterilized or incinerated by validated procedures. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium.

Waste Disposal

After interpretation all items should be destroyed by standard incineration methods.

Performance Testing Results:

Streaking from fresh colony culture.

Test	ATCC NO	Incubation Temp. (℃)	Incubation Cond.	Reaction 1	BUTT	H_2S	SLANT
Escherichia coli	25922	33-37 ℃	Aerobic, 24 hours	Good	N	-	K
Proteus mirabilis	4630	33-37 ℃	Aerobic, 24 hours	Good	A	-	R
Proteus vulgaris	33420	33-37 ℃	Aerobic, 24 hours	Good	A	-	R
Providencia alcalifaciens	51902	33-37 ℃	Aerobic, 24 hours	Good	A	-	R
Citrobacter freundii	43864	33-37 ℃	Aerobic, 24 hours	Good	A	+	K
Salmonella typhimurium	14028	33-37 ℃	Aerobic, 24 hours	Good	K	+	K
Shigella flexneri Type 29	29903	33-37 ℃	Aerobic, 24 hours	Good	A	-	K

K = alkaline = purple color.
N = neutral = bluish gray color.
A = acid = yellow color.
*K or N in the test tube butt = positive decarboxylation.
R =red color = lysine deamination

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