

Lysine Iron Agar

Catalog : HB4201-1-500

Lysine Iron Agar is used for the differentiation of enteric organisms based on their ability to decarboxylate or deaminate lysine and to form hydrogen sulfide.

Approximate Formula:

Ingredients	gm/liter
Peptic Digest of Animal Tissue	5.0
Dextrose	1.0
Yeast Extract	3.0
L- Lysine Hydrochloride	10.0
Sodium Thiosulfate	0.04
Ferric Ammonium Citrate	0.5
Bromocresol Purple	0.02
Agar	12.5
Final pH 6.7±0.2 at 25°C	

Directions:

Suspend 32.06g of the medium in one liter of distilled water or deionized water. Mix well and heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Autoclave at 121°C for 15 minutes. Cool tubes in a slanted position to form slants with deep butts.

Principle and Interpretation:

Dextrose serves as a source of fermentable carbohydrate. The pH indicator, bromocresol purple, is changed to a yellow color at or below pH 5.2 and is purple at or above pH 6.8 Ferric ammonium citrate and sodium thiosulfate are indicators of hydrogen sulfide formation. Lysine is the substrate for use in detecting the enzymes, lysine decarboxylase and lysine deaminase.

Cultures of enteric bacilli that produce hydrogen sulfide cause blackening of the medium due to the production of ferrous sulfides. Those that produce lysine decarboxylase produce an alkaline reaction (purple color) or neutral reaction in the butt of the medium. Organisms that deaminate the lysine cause the development of a red slant over an acid butt. Gas may be formed but its formation is often irregular or suppressed.

Appearance:

Dehydrated medium is a free-flowing yellowish powder. The prepared medium is a kind of purple transparent gel.

Precautions:

This medium is for laboratory use only. Dried medium which is past shelf life, caking or color variation cannot be used.

Storage conditions and Shelf life:

Lysine Iron Agar must be stored tightly capped in the original container at 5-30°C. The dehydrated medium has a shelf life of 5 years from date of manufacturing. Prepared medium may be stored, out of direct light at 2-8°C.

Quality control:

Prepare the culture medium as per label directions. Inoculate and incubate at 36±1°C for 18-24 hours.

Microorganism	Strains Number	Growth	Slant	Butt	H ₂ S
<i>Escherichia coli</i>	ATCC 25922	luxuriant	Purple	Purple	-
<i>Salmonella typhimurium</i>	ATCC 14028	luxuriant	Purple	Purple	+
<i>Salmonella Arizona</i>	CMCC 47001	luxuriant	Purple	Purple	+
<i>Proteus vulgaris</i>	ATCC 13315	luxuriant	Purple	Yellow	+
<i>Shigella flexneri</i>	ATCC 12022	luxuriant	Purple	Yellow	-

References:

1. Ewing and Edwards. 1960. Int. Bull. Bacteriol. Nomencl. Taxon. 10:1.
2. Edwards and Ewing. 1962. Identification of Enterobacteriaceae. Burgess Publishing Co., Minneapolis, Minn.