

CM 21026 – LYSINE IRON AGAR (VEG.)

INTENDED USE

For differentiation of enteric organisms especially Salmonella species based on their ability to decarboxylate or deaminate lysine and production of H₂S.

PRODUCT SUMMARY AND EXPLANATION

This medium is prepared by replacing Peptic digest of animal tissue with Veg peptone which makes the medium free of BSE/TSE risks. Lysine Iron Veg Agar (Veg) is modification of Lysine Iron Agar which was developed by Edwards and Fife to detect lactose fermenting Salmonellae. Salmonellae are known to decarboxylate lysine rapidly and produce large amounts of hydrogen sulphide. This medium is a sensitive medium for the detection of lactose fermenting and lactose non-fermenting Salmonella species. Many strains of this group ferment lactose very rapidly thus suppressing hydrogen sulphide (H₂S) production on Triple Sugar Iron Agar (Veg). So there is a possibility that the organisms frequently found in food poisoning outbreaks could be overlooked. Thatcher and Clark described the isolation of Salmonella species from foods from selective agar and to inoculate it on Lysine Iron Agar (Veg) and Triple Sugar Iron Agar (Veg) together. Using these two media greater discrimination can be made between coliform organisms e.g. Escherichia and Shigella.

COMPOSITION

Ingredients	Gms / Ltr
Veg peptone	5.0
Yeast extract	3.0
Dextrose	1.0
L-Lysine	10.0
Ferric ammonium citrate	0.5
Sodium thiosulphate	0.04
Bromo cresol purple	0.02
Agar	15.0

PRINCIPLE

This medium consists of Veg peptone and yeast extract provide essential nutrients. Dextrose is a source of fermentable carbohydrate. Ferric ammonium citrate and sodium thiosulphate are indicators of hydrogen sulphide (H₂S) formation. Cultures that produce hydrogen sulphide cause blackening of the medium due to ferrous sulphide production. Lysine decarboxylation causes an alkaline reaction (purple colour) to give the amine cadaverine and the organisms which do not decarboxylate lysine, produce acid butt (yellow colour). Organisms that deaminate lysine, form alpha - Ketocarboxylic acid, which reacts with iron salt near the surface of the medium under the influence of oxygen to form reddish-brown compound. The medium is stabbed to the base of the butt and streaked on slant.

INSTRUCTION FOR USE

- Dissolve 34.56 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense into tubes and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool the tubes in slanted position to form slants with deep butts.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder	: Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.
Appearance of prepared medium	: Purple coloured, clear to slightly opalescent gel forms in tubes as slants.
pH (at 25°C)	: 6.7 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Butt	Slant	H ₂ S	Incubation Temperature	Incubation Period
Citrobacter freundii	8090	50-100	Luxuriant	Acidic reaction, yellow colour	Alkaline reaction, purple colour, (no colour change)	Positive (blackening of the medium)	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Luxuriant	Alkaline reaction, purple colour, (no colour change)	Alkaline reaction, purple colour, (no colour change)	Negative	35-37°C	18-24 Hours
Proteus mirabilis	25933	50-100	Luxuriant	Acidic reaction, yellow colour	Deep red, lysine deamination	Positive (blackening of the medium)	35-37°C	18-24 Hours
Salmonella serotype Arizonae	13314	50-100	Luxuriant	Alkaline reaction, purple colour, (no colour change)	Alkaline reaction, purple colour, (no colour change)	Positive (blackening of the medium)	35-37°C	18-24 Hours
Salmonella serotype Typhimurium	14028	50-100	Luxuriant	Alkaline reaction, purple colour, (no colour change)	Alkaline reaction, purple colour, (no colour change)	Positive (blackening of the medium)	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Luxuriant	Acidic reaction, yellow colour	Alkaline reaction, purple colour, (no colour change)	Negative	35-37°C	18-24 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

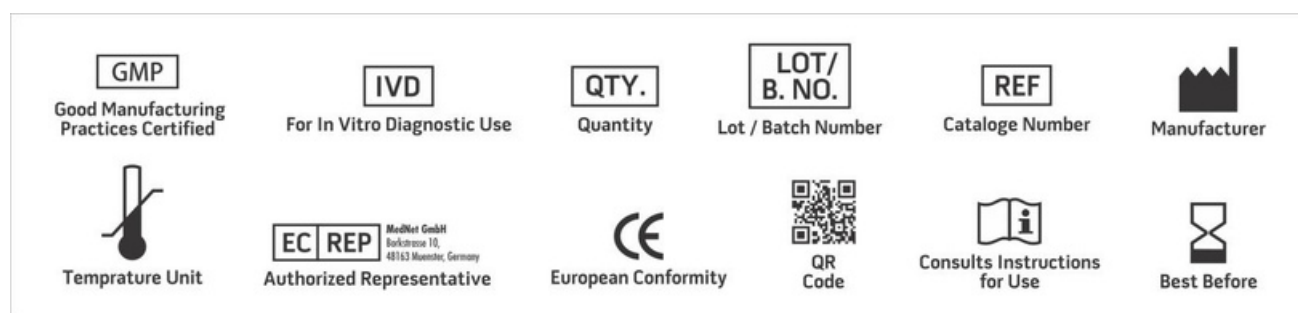
DISPOSAL



After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Edward P.R. and Fife M.A., 1961, Appl. Microbiol., 9:478.
2. Moeller V., 1954, Acta Pathol. Microbiol. Scand., 355:259.
3. Ewing W.H., Davis B.R. and Edward P.R., 1960, Pub. Hlth. Labs., 18:77.
4. Thatcher F.S. and Clark D.S., 1968, University of Toronto Press, p. 100.
5. Johnson J.G., Kunz L.J., Barron W. and Ewing W.H., 1966, Appl. Microbiol., 14:212.
6. Finegold S.M. and Martin W.J., 1982, Bailey and Scott's Diagnostic Microbiology, 6th ed., The C.V. Mosby Co., St. Louis.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For LabUse Only

