Technical Data

Lysine Indole Motility Medium, Modified M1977

Intended Use:

It is used as an aid for the identification of members of *Enterobacteriaceae* on the basis of lysine decarboxylase, indole production and motility.

Composition**

Ingredients	Gms / Litre
Peptone	12.800
Yeast extract	3.000
L-Tryptophan	0.500
L-Lysine	10.000
Dextrose (Glucose)	1.000
Bromocresol purple	0.020
Agar	2.700
Final pH (at 25°C)	6.7±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.02 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Dispense into tubes in 5 ml amounts. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubes in an upright position.

Principle And Interpretation

Lysine Indole Motility Medium, Modified is a semisolid medium used for the differentiation of *Enterobacteriaceae* group by lysine decarboxylation, indole production and motility(1).

Peptone and yeast extract supply amino acids and other complex nitrogenous substances. Dextrose (Glucose) is a source of energy. A small amount of agar is added for demonstration of motility along the stab line of inoculation. Growth of motile organisms extends out from the line of inoculation, while non-motile organisms grow only along the stab line. Bromocresol purple serves as the pH indicator.

When inoculated with an organism that ferments dextrose, acids are produced that lower the pH, causing the indicator in the medium to change from purple to yellow. The acidic pH also stimulates decarboxylase enzyme activity. Organisms that possess a specific decarboxylase degrade the amino acid provided in the medium, yielding a corresponding amine. Lysine decarboxylation yields cadaverine. The production of these amines elevates the pH and causes the medium in the bottom portion of the tube to revert to a purple color. The medium in the upper portion of the tube remains acidic because of the higher oxygen tension. If the organism being tested does not produce the required decarboxylase, the medium remains yellow (acidic) throughout or yellow with a purple or red reaction near the top. Indole is produced in this medium by organisms that possess the enzyme tryptophanase. Tryptophanase degrades typtophan,yielding indole. It can be detected in the medium by adding Kovacs reagent to the agar surface. Indole combines with the p-dimethylaminobenzaldehyde of Kovacs reagent and produces a red complex.

Cultures under study are stab-inoculated and incubated at 37°C for 18-24 hours. Motility, lysine deamination and lysine decarboxylation reactions can be read simultaneously prior to addition of Kovacs reagent for studying indole reaction as it causes the colour of the medium to change to yellow. Therefore positive lysine decarboxylase reaction could be misinterpreted as negative.

Type of specimen

Pure isolates

Specimen Collection and Handling

For pure isolate samples follow appropriate techniques for handling specimens as per established guidelines (4,5).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Please refer disclaimer Overleaf.

Shigella flexneri ATCC 12022	50-100	negative, growth along the stabline	occasional reaction	negative reaction

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Igarashi.H et al.(1969)A new differential medium for enteric pathogens, lysine-indole-motility medium

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Disclaimer :

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