

Lysine Decarboxylase Agar (i23628)

Recommended for differentiation of bacteria on the basis of their ability to decarboxylate lysine.

Industry: Water / Food

Principles & Uses

Lysine Decarboxylase Agar, following Moeller's formulation, serves to differentiate bacteria based on their ability to decarboxylate lysine.

The medium includes peptone and yeast extract, providing essential nitrogenous nutrients for bacterial growth. Dextrose acts as a fermentable carbohydrate, and the pH indicator, bromocresol purple, shifts from purple to yellow in acidic conditions. The decarboxylase activity, stimulated by acidic pH, leads to the degradation of lysine into corresponding amines, altering the pH and indicator color from yellow to purple violet.

To prevent air-induced alkalization, covering the inoculated tubes with a layer of sterile mineral oil is recommended for optimal results. Lysine Decarboxylase Agar play a vital role in the biochemical differentiation of gram-negative enteric bacilli, aiding in the accurate identification of bacterial species.

Composition (gr/L)

Peptone 5 g, Yeast Extract 3 g, Dextrose 1 g, Lysine 5 g, Bromocresol purple 0.02 g, Agar 15 g.

Final pH at 25°C 6.5 ± 0.2

Preparation from dehydrated Powder

Suspend 29.02 g of the powder in 1 L of purified water. Mix thoroughly. Autoclave at 121°C for 15 minutes. 4. Allow to cool to 45-55 °C and then Dispense into sterile test tubes and cool in a slanted position. After culturing, fill the test tube with mineral oil to cover the surface of the medium.

Quality Control

Dehydrated Appearance: Light yellow to greenish yellow, free-flowing, homogeneous.

Prepared Appearance: Purple colored, Clear gel in tubes as slants.

Reaction of 2.9% Solution at 25°C: pH 6.5 ± 0.2

Cultural Response

Cultural characteristics observed after an incubation at 35 – 37 °C for up to 4 days and overlying with sterile mineral oil.

Organism (ATCC*)	Lysine Decarboxylation
<i>Citrobacter freundii</i> (8090)	Negative Reaction Yellow color
<i>Enterobacter aerogenes</i> (13048)	Positive reaction Purple color
<i>Escherichia coli</i> (25922)	Positive reaction Purple color
<i>Salmonella enterica</i> (14028)	Positive reaction Purple color
<i>Shigella flexneri</i> (12022)	Negative Reaction Yellow color
<i>Pseudomonas aeruginosa</i> (27853)	Negative Reaction Yellow color

*ATCC is a registered trade mark of the American Type Culture Collection.



Citrobacter freundii (left). *Salmonella enterica* (middle). Prepared Culture Media (right). Cultured tubes are covered with oil.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.