



Litmus Lactose Agar

M114

Litmus Lactose Agar is recommended for differentiation of lactose-fermenting and lactose non-fermenting bacteria.

Composition**

Ingredients	Gms / Litre
Meat peptone	5.000
Beef extract	3.000
Lactose	10.000
Litmus	1.000
Agar	10.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 29 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Numerous plating media are in use today for the differentiation of lactose-fermenters and lactose non-fermenters. Some of these are selective, whereas others are differential. Some lactose fermenting, gram-negative enteric bacteria can tolerate the inhibitory substances present in the media. These bacteria can be recognized readily by their appearance on selective plates.

Litmus Lactose Agar is formulated by Wurtz (1) for the differentiation of lactose fermenting and lactose non-fermenting bacteria.

Meat peptone and beef extract in the medium provide nitrogenous nutrients to the organisms. Lactose is fermented by lactose fermenting bacteria with acid production. Litmus is the pH indicator, which turns red at acidic pH. Colonies of lactose fermenting bacteria are surrounded by a red zone, which distinguishes them from colonies of other organisms that either do not change the surrounding medium or change it to blue due to production of ammonia. Inoculate culture from primary fermentation tubes showing gas either by streaking directly or by pour plate method of serially diluted culture (2).

Quality Control

Appearance

Light purple to greyish yellow homogeneous free flowing may contain minute to small particles.

Gelling

Firm, comparable with 1.0% Agar gel.

Colour and Clarity of prepared medium

Dark purple coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 2.9% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M114: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	≥70%	red

<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	luxuriant	$\geq 70\%$	red
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	luxuriant	$\geq 70\%$	deep blue - violet
<i>Salmonella Typhi</i> ATCC 6539	50-100	luxuriant	$\geq 70\%$	deep blue - violet
<i>Shigella flexneri</i> ATCC 12022	50-100	luxuriant	$\geq 70\%$	deep blue - violet

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.Wurtz R., 1897, Technique Bacteriologique, Paris, Masson.
- 2.MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.

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