Technical Information

Litmus Lactose Agar

Product Code : DM 1114

Application: 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

Principle & Interpretation

A number of plating media are available now a days to study the differentiation of lactose-fermenters from 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 colony appearance on selective plates.

Litmus Lactose Agar formulated by Wurtz [1] is used 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 making colonies of lactose fermenting bacteria are surrounded by a red zone, which distinguishes them from colonies of other organisms in which surrounding medium do not change or change to blue colour due to production of ammonia. Culture should be inoculated from primary fermentation tubes showing gas either by streaking directly or by pour plate method of serially diluted culture [2].

Methodology

Suspend 29 grams of powder media in 1000 ml distilled water. Shake well & heat 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.

Quality Control

Physical 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 Range 6.80-7.20

Cultural Response/Characteristics
DM 1114: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Escherichia coli *ATCC 25922*	50-100	luxuriant	>=70%	Red
Klebsiella pneumoniae *ATCC 13883*	50-100	luxuriant	>=70%	Red
Pseudomonas aeruginosa *ATCC 27853*	50-100	luxuriant	>=70%	Deep blue-violet
Salmonella Typhi *ATCC 6539*	50-100	luxuriant	>=70%	Deep blue-violet
Shigella flexneri *ATCC12022*	5-100	Luxuriant	>=70%	Deep blue-violet

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

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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