B.T.B. Lactose Agar, Modified (Lactose Blue Agar)

M1081

B. T. B. Lactose Agar, Modified (Lactose Blue Agar) is recommended for differentiation of lactose-fermenting and non-fermenting bacteria belonging to *Enterobacteriaceae* .

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	3.500
Casein enzymic hydrolysate	3.500
Sodium chloride	5.000
Lactose	15.500
Bromo thymol blue	0.040
Agar	13.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40.54 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

Reactions with lactose are of great practical importance for the primary isolation of *Enterobacteria* from clinical specimens. The specimens e.g. faeces is usually plated on a lactose-containing medium on which lactose fermenters and lactose non fermenters form coloured and pale colonies respectively due to the dye incorporated. This procedure makes an immediate presumptive distinction between colonies of the true intestinal pathogens possible. *Salmonella* and *Shigella* , do not ferment lactose while the common intestinal commensals, *Escherichia* and *Klebsiella* , which do ferment lactose (1). Lactose Blue Agar is used for differentiating lactose fermenting and non-fermenting bacteria belonging to the family *Enterobacteriaceae* .

Casein enzymic hydrolysate and peptic digest of animal tissue provide essential nutrients for bacterial metabolism. Lactose provides a fermentable carbohydrate source for the enteric bacteria. Bromo thymol blue is the pH indicator for indicating acid production due to carbohydrate fermentation. The dye turns yellow at acidic pH and imparts yellow colour to the colony. Alkalinization produces a blue coloration. Winkle (2) recommended addition of 0.28g/l metachrome yellow to suppress the swarming of *Proteus* species.

Quality Control

Appearance
Cream to greenish yellow homogeneous free flowing powder

Gelling
Firm,comparable with 1.3% Agar gel.

Colour and Clarity of prepared medium
Green coloured, clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 4.05% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

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

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony

Cultural Response

Escherichia coli ATCC 25922	50-100	luxuriant	>=70%	yellow, opaque
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	>=70%	bluish
Salmonella Typhi ATCC 6539	50-100	luxuriant	>=70%	bluish
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	>=70%	deep yellow

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. Cruikshank R., Duguid J. P., Marmion B. P., Swain R. H. A., (Eds.), 1975, Medical Microbiology, The Practice of Medical Microbiology, 12th Edition, Vol. II, Churchill Livingstone
2. Winkle S., 1947, Zbl. Bakt. I. Orig., 152:103.

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