

Technical Information

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

Product Code: DM 2081

Application: - 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

Principle & Interpretation

Reactions with lactose are of at utmost 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 presence of dye. This procedure makes an immediate presumptive distinction between colonies of the true intestinal pathogens. *Salmonella* and *Shigella*, do not ferment lactose while the common intestinal commensals, *Escherichia* and *Klebsiella*, 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.

Methodology

Suspend 40.54 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

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 range

6.80-7.20

Cultural Response/Characteristics

DM2081: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colours of colony
<i>Escherichia coli</i> ATCC 25922	50-100	Luxuriant	>=70%	Yellow, opaque
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	Luxuriant	>=70%	Bluish
<i>Salmonella Typhi</i> ATCC 6539	50-100	Luxuriant	>=70%	Bluish
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-Luxuriant	>=70%	Deep yellow

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: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

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

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