



China Blue Lactose Agar

Intended Use:

Recommended for differentiation and enumeration of bacteria in milk.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
HM peptone B#	3.000
Lactose	10.000
Sodium chloride	5.000
China blue	0.300
Agar	15.000
Final pH (at 25°C)	7.0±0.2
**F	£

**Formula adjusted, standardized to suit performance parameters

- Equivalent to Beef extract

Directions

Suspend 38.3 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Raw milk as it leaves the udder of healthy animals normally contains very low numbers of microorganisms. After it leaves the udder, it may become contaminated with microorganisms from the surface of the cow, the environment, and unclean milking system (7). Gram-positive cocci are usually present as normal flora of raw milk (4). Raw milk may get contaminated with organism associated with foodborne illness through infected animals, milking personnel or the environment. The predominant bacteria in pasteurized milk are members of coliform group (3). China Blue Lactose Agar originally formulated by Brandl and Sobeck-skal (2) is a standard non-inhibitory medium used for the differentiation of lactose fermenters from the non-lactose fermenters in milk. The medium does not contain any inhibitory substances therefore all the organisms present in milk sample grow luxuriantly on this medium.

Peptone and HM peptone B are the sources of carbon, nitrogen and essential growth nutrients. Lactose serves as a source of energy by being the fermentable carbohydrate. Sodium chloride helps to maintain the osmotic equilibrium of the medium. China blue is the pH indicator that changes from colourless to blue due to degradation of lactose to acid, thus differentiating lactose-fermenters from non-fermenters.

Type of specimen

Raw milk samples

Specimen Collection and Handling:

For dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. pH of the prepared medium should be tested before use.

2. Further biochemical and serological tests must be carried out for further identification.

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Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Light yellow to greenish yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light blue coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.83% w/v aqueous solution at 25°C. pH : 7.0±0.2

pН

6.80-7.20

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 22-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Enterococcus faecalis ATCC 29212 (00087*)	50-100	luxuriant	>=70%	blue
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant	>=70%	blue
Proteus vulgaris ATCC 13315	50-100	luxuriant	>=70%	colourless
Salmonella Typhi ATCC 6539	50-100	luxuriant	>=70%	colourless
Shigella flexneri ATCC 12022 (00126*)	50-100	luxuriant	>=70%	colourless
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50-100	luxuriant	>=70%	colourless

Key: *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference

- 1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
- 2. Brandl E. and Sobeck Skal E., 1963, Milchwiss. Ber., 13:1.
- 3. Cousin M. A., 1982, J. Food Prot., 45:172
- 4. De Vris T. 1975, Neth. Milk Dairy J., 29:127
- 5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

- 7. Thomas S. B., 1974, the Microflora of Bulk Collected Milk- Part 2, Dairy Ind. Int. 39 (8): 279
- 8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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Disclaimer :

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