

China Blue Lactose Agar, Granulated

GM580

China Blue Lactose Agar, granulated is a standard, non-inhibitory medium used for the differentiation and enumeration of bacteria in milk.

Composition**

| Ingredients | Gms / Litre |
|--------------------------------|-------------|
| Peptic digest of animal tissue | 5.000 |
| Beef extract | 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 |

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 38.3 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. Cool to 45-50°C. Mix well and pour into sterile Petri plates or as desired.

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 (1). Gram-positive cocci are usually present as normal flora of raw milk (2). 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 (4) 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.

Peptic digest of animal tissue and beef extract 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.

Quality Control

Appearance

Light yellow to greenish yellow coloured granular medium

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

pH

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 |
|----------|----------------|--------|----------|------------------|
|----------|----------------|--------|----------|------------------|

Cultural Response

| | | | | |
|---|--------|-----------|-------------|------------|
| <i>Enterococcus faecalis</i> ATCC 29212 | 50-100 | luxuriant | $\geq 70\%$ | blue |
| <i>Escherichia coli</i> ATCC 25922 | 50-100 | luxuriant | $\geq 70\%$ | blue |
| <i>Proteus vulgaris</i> ATCC 13315 | 50-100 | luxuriant | $\geq 70\%$ | colourless |
| <i>Salmonella</i> Typhi ATCC 6539 | 50-100 | luxuriant | $\geq 70\%$ | colourless |
| <i>Shigella flexneri</i> ATCC 12022 | 50-100 | luxuriant | $\geq 70\%$ | colourless |
| <i>Staphylococcus aureus</i> ATCC 25923 | 50-100 | luxuriant | $\geq 70\%$ | colourless |

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. Thomas S. B., 1974, the Microflora of Bulk Collected Milk- Part 2, Dairy Ind. Int. 39 (8): 279
2. De Vris T. 1975, Neth. Milk Dairy J., 29:127
3. Cousin M. A., 1982, J. Food Prot., 45:172
4. Brandl E. and Sobeck - Skal E., 1963, Milchwiss. Ber., 13:1.

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