Technical Information

Lactic Agar

Product Code: DM 1599

Application: - Lactic Agar is recommended for enumeration and identification of lactic Streptococci and Lactobacilli by pour plate technique.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Yeast extract	5.000
Gelatin	2.500
Dextrose	5.000
Lactose	5.000
Sucrose	5.000
Sodium chloride	4.000
Sodium acetate	1.500
Ascorbic acid	0.500
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Lactic Agar was formulated by Elliker et al [1] and recommended by APHA [2] for cultivation of lactic bacteria to enhence the colony development of Lactobacilli and lactic Streptococci. Samples are analyzed by pour plate technique. Lactic acid bacteria are fastidious in nature and hence Lactic Agar is designed to satisfy their growth requirement. Lactic acid bacteria survive at low pH, but are very sensitive to other adverse conditions.

Samples to be examined for enumeration of viable lactic acid bacteria should not be frozen prior to analysis. Many of the lactic acid bacteria are easily killed or injured by freezing. For dilution of products it is best to use sterile 0.1% Peptone Water (DM1028) as the diluent since it protects bacteria during the dilution process [3, 4].

Casein enzymic hydrolysate and yeast extract provide amino acids, other nitrogenous nutrients, vitamin B complex etc. Dextrose, lactose and sucrose are the fermentable carbohydrates. Ascorbic acid provides vitamin C required by lactic acid bacteria. Sodium chloride maintains the osmotic equilibrium of the medium. Sodium acetate inhibits contaminating bacteria and restricts the swarming of lactic acid bacteria. Upon incubation, the colonies are examined for gram staining and catalase production. Gram-positive, catalase-negative cocci or rods are tentatively considered to be lactic acid bacteria (2).

Methodology

Suspend 63.5 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 yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates

Cultural Response/Characteristics

DM 1599: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Lactobacillus bulgaricus ATCC 11842	50-100	good-luxuriant	>=50%
Lactobacillus casei ATCC 9595	50-100	good-luxuriant	>=50%
Lactobacillus lactis ATCC 8000	50-100	good-luxuriant	>=50%
Streptococcus cremoris ATCC 19257	50-100	good-luxuriant	>=50%
Streptococcus therm ophilus ATCC 14485	50-100	good-luxuriant	>=50%

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. Elliker P. R., Anderson A. W. and Hanesson G., 1956, J. Dairy Science, 39:1611.
2. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
3. Hartman P. A., and Huntsberger D. V., 1961, Appl. Microbiol., 9-324. Jayne-Williams D. J., 1963, J. Appl. Bacteriol., 26:398

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