Lactic HiVeg Agar

MV599

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

Composition**

Ingredients	Gms / Litre
HiVeg hydrolysate	22.500
Yeast extract	5.000
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

Directions

Suspend 63.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Lactic Agar was developed by Elliker et al (1) and recommended by APHA (2) for cultivation of lactic bacteria to promote the colony development of Lactobacilli and lactic Streptococci. Lactic HiVeg Agar is prepared by replacing animal based peptones with vegetable peptones to avoid BSE/TSE risks associated with animal peptones. Samples are analyzed by pour plate technique. Lactic acid bacteria are fastidious in nature and hence Lactic HiVeg 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 HiVeg Water (MV028) as the diluent since it protects bacteria during the dilution process (3)

HiVeg 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).

Quality Control

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

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery

Cultural Response

Lactobacillus bulgaricus ATCC 11842	50-100	good-luxuriant	>=70%
Lactobacillus casei ATCC 9595	50-100	good-luxuriant	>=70%
Streptococcus cremoris ATCC 19527	50-100	good-luxuriant	>=70%
Streptococcus thermophilus ATCC 14486	50-100	good-luxuriant	>=70%
Lactobacillus lactis ATCC 8000	50-100	good-luxuriant	>=70%

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.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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