Technical Information

M17 MiVeg Agar Base

Product Code : VM1929

Application:- M17 MiVeg Agar Base is a selective medium used for enumeration and cultivation of lactic *Streptococci* from yoghurt , cheese starters and other dairy products and for plaque assay of lactic bacteriophages.

Composition

Ingredients	Gms / Litre
MiVeg peptone	5.0
Papaic digest of soyabean meal	5.0
Yeast extract	2.5
MiVeg extract	5.0
Ascorbic acid	0.5
Magnesium sulphate	0.25
Lactose	5.0
Agar	10.0
Final pH (at 25°C)	7.1±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

M17 MiVeg Agar Base is specially prepared by using MiVeg peptone and MiVeg extract in place of animal based peptone and Beef extract respectively which makes it free from BSE/TSE risks. This medium is the modification of M17 Agar Base which is based on the formulation described by Terzaghi and Sandine (1) for the cultivation and enumeration of lactic *Streptococci* and their bacteriophages.

By using this medium study plaque morphology and lysogeny can be done. Lactic *Streptococci* are nutritionally fastidious and require complex media for optimal growth (2,3). Disodium glycerophosphate helps to balance the pH above 5.7 as acid is produced by lactose fermentation. The maintenance of pH is very important as lower pH results in injury and reduced recovery of lactic *Streptococci*. Glycerophosphate does not form precipitate with calcium which is needed for the plaque assay of lacticbacteriophages.

It contains MiVeg peptone, Papaic digest of soyabean meal, yeast extract, MiVeg extract, which supplies carbonaceous, nitrogenous compounds, vitamin B complex and other essential growth factors. Lactose serve as the fermentable carbohydrate and ascorbic acid stimulates the growth of lactic *Streptococci*. Magnesium sulphate provides essential ions to the organisms.

Shankar and Davies (4) reported isolation and enumeration of *Streptococcus thermophilus* from yoghurt. Disodium glycerophosphate suppresses *Lactobacillus bulgaricus*. This media is suitable for cultivation and maintenance of starter cultures for cheese and yoghurt manufacturing. This medium helps in detecting *Streptococcus mutants* which is a lactose non-fermenter.

Methodology

Suspend 33.25 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Quality Control

Physical Appearance

Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.0% Agar gel.

Colour and Clarity of prepared medium

Light yellow coloured, slightly opalescent gel forms in petri plates.

Reaction

Reaction of 3.33 % w/v aqueous solution pH: 7.1 ±0.2 at 25°C

pH range

6.9-7.3

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
Enterococcus faecalis (29212)	10^2-10^3	good-luxuriant	>50%
Lactobacillus bulgaricus (11842)	10^2-10^3	none-poor	>10%
Lactobacillus leichmannii (4797)	10^2-10^3	good-luxuriant	>50%
Lactobacillus plantarum (8014)	10^2-10^3	good-luxuriant	>50%
Streptococcus thermophilus (14486)	10^2-10^3	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. Terzaghi B.E. and Sandine W.E., 1975, Appl. Microbiol., 29:807.
2. Anderson A.W. and Elliker P.R., 1953, J. Dairy Sci., 36:161.
3. Reiter B. and Oran J.D., 1962, J. Dairy Res., 29:63.
4. Shankar P.A. and Davies F.L., 1977, Soc. Dairy Technol., 30:28.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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