Technical Information

Mannitol Salt MiVeg Agar Base

Product Code : VM1118

Application:- Mannitol Salt MiVeg Agar Base is a selective medium used for the isolation of pathogenic *Staphylococci*.

Composition

Ingredients	Gms / Litre
MiVeg peptone No. 3	10.00
MiVeg extract	1.00
Sodium chloride	75.00
D-Mannitol	10.00
Phenol red	0.025
Agar	15.00
Final pH (at 25°C)	7.4±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Mannitol Salt MiVeg Agar Base is prepared by using vegetable peptone in place of animal based peptones thereby making the medium free from BSE/TSE risks. This media is the modification of Mannitol Salt Agar Base which is prepared as suggested by Chapman (1) and is used for the selective isolation of pathogenic *Staphylococci* and also is recommended for the detection and enumeration of coagulase-positive *Staphylococci* in milk (2) food (3) and other specimens.

The medium is very nutrious as it contains MiVeg extract and MiVeg peptone No. 3 which supplies essential growth factors and trace nutrients. Due to presence of 7.5% sodium chloride many bacteria except *Staphylococci* are inhibited. Mannitol serve as the source of fermentable carbohydrate. The differential action of the medium is attributed to D-Mannitol. *Staphylococcus aureus* ferments mannitol to produce yellow colonies with yellow zones. The growth of most coagulase-negative species of *Staphylococci* and *Micrococci* which do not ferment mannitol is shown as small red colonies surrounded by red or purple zones. The colour of colonies and medium depends upon the reactivity of phenol red to the pH of the medium; phenol red is red at pH 8.4 and yellow at 6.8. Yellow colonies should be tested for production of coagulase. Addition of 5% v/v Egg Yolk Emulsion (MS2045) enables to detect lipase activity of *Staphylococci* alongwith mannitol fermentation. Sodium chloride present in the medium clears egg yolk emulsion and the lipase production is detected as yellow opaque zone around the colonies (4). Presumptive coagulase-positive *Staphylococci* produces colonies surrounded by bright yellow zones while non- pathogenic *Staphylococci* produce colonies with reddish purple zones.

Methodology

Suspend 111 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. If desired, add 5% v/v Egg Yolk Emulsion (MS2045) to MV118. Mix well and dispense as desired.

Quality Control

Physical Appearance

Light pink coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Red coloured, clear to slightly opalescent gel forms in petri plates,.

Reaction

Reaction of 11.1 % w/v aqueous solution pH: 7.4 ±0.2 at 25°C

pH range

7.2-7.6

Cultural Response/Characteristics

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

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
Staphylococcus aureus (25923)	10^2-10^3	Good to luxuriant	>70%	yellow
Staphylococcus epidermidis (12228)	10^2-10^3	fair to good	>50%	red
Escherichia coli (25922)	10^3-2x10^3	inhibited	0%	-
Enterobacter aerogenes (13048)	10^3-2x10^3	inhibited	0%	-
Proteus mirabilis (12453)	10^3-2x10^3	none to poor	<20%	red

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. Chapman G.H., 1945, J. Bact., 50:201.
2. Standard Methods for the Examination of Dairy Products. 17th Edition, 2004 Edited by H. Michael Wehr and Joseph H.Frank.
3. Bacteriological Analytical Manual, 1995, Food and Drug Administration, 8th ed., AOAC, International, U.S.A.
4. Gunn B.A., Dunkelberg W.E. and Creitz J.R., 1972, Am. J. Clin. Path., 57:236

Disclaimer :

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