Technical Information

Mannitol Salt MiVeg Broth

Product Code :VM1383

Application:- Mannitol Salt MiVeg Broth is used as a selective medium 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
Final pH (at 25°C)	7.4±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Mannitol Salt MiVeg Broth 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 Broth 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 nutritious as it contains MiVeg extract and MiVeg peptone No. 3 supplies essential growth factors and trace nutrients. Due to presence of 7.5% sodium chloride many other 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 colour in the media. The growth of most coagulase-negative species of *Staphylococci* and *Micrococci* which do not ferment mannitol is shown as red or purple turbid medium. The colour of the 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. The Yellow medium can be tested further for the production of coagulase. Presumptive coagulase-positive *Staphylococci* changes the medium to bright yellow while non- pathogenic *Staphylococci* to reddish purple colour.

Methodology

Suspend 96 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. Dispense as desired.

Quality Control

Physical Appearance

Light pink coloured, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Red coloured, clear solution in tubes.

Reaction

Reaction of 9.6 % 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	Colour of media
Staphylococcus aureus (25923)	10^2-10^3	Good to luxuriant	yellow
Staphylococcus epidermidis (12228)	10^2-10^3	fair to good	red
Escherichia coli (25922)	10^3-$2x10^3$	inhibited	-
Enterobacter aerogenes (13048)	10^3-$2x10^3$	inhibited	-
Proteus mirabilis (12453)	10^3-$2x10^3$	none to poor	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.

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