Technical Information

Coagulase Mannitol MiVeg Agar Base

Product Code :VM1272

Application:- Coagulase Mannitol MiVeg Agar Base with plasma is selective medium, used for isolation and differentiation of *Staphylococci* from clinical specimens or for classifying pure isolates of *Staphylococci*.

Composition

Ingredients	Gms / Litre
MiVeg special infusion	5.0
MiVeg hydrolysate	10.5
Papaic digest of soyabean meal	3.5
Sodium chloride	3.5
Mannitol	10.0
Bromo cresol purple	0.02
Agar	14.5
Final pH (at 25°C)	7.4±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Coagulase Mannitol MiVeg Agar Base is prepared by using vegetable peptones instead of animal based peptones thereby making the medium free from BSE/TSE risks. This medium is used for the isolation of *Staphylococcus aureus* from clinical specimens and for differentiation of *Staphylococcus aureus* from other species on the basis of coagulase production and mannitol fermentation. Chapman for the first time introduced medium for selective isolation and differentiation of *Staphylococci* (1). Tellurite-glycine media were designed by Zebovitz et al (2) and Marwin (3) for selectively isolating coagulase positive *Staphylococcal* species. Present medium is based on Esber and Faulconer formulation (4). This medium is the modification of coagulase Mannitol Agar Base. The mutant or old cultures of *Staphylococcus aureus* may produce coagulase weakly. They should be freshly subcultured and rechecked. *Escherichia coli* ferments mannitol and may be weakly coagulase positive. Production of Coagulase depends upon the presence of a fermentable sugar like mannitol in this case. It also depends on the presence of a protein factor in the MiVeg special infusion and blood plasma (4). The pH of the medium surrounding the colonies of coagulase positive colonies drops when mannitol fermentation take place. This drop in pH is indicated by the change in colour of media which turns yellow and exhibit yellow zones around the colonies due to the presence of Bromo cresol purple as pH indicator.

An opaque area of coagulated plasma forms around the colonies of coagulase positive organisms. *Staphylococcus epidermidis* is coagulase negative and mannitol nonfermenting and therefore, does not make any changes in the colour of the medium. Coagulase negative species may ferment mannitol and produce a yellow zone around the colonies but an opaque zone will not be formed.

Methodology

Suspend 47 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. Cool to 45-50°C. Add 7-15% v/v sterile, pretested, rabbit plasma to the basal medium. Mix well and pour into sterile plates.

Quality Control

Physical Appearance

Light grey coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.45% Agar gel

Colour and Clarity of prepared medium

Purple coloured, slightly opalescent gel forms in petri plates.

Reaction

Reaction of 4.7 % 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 with added 7 - 15% v/v sterile pretested, rabbit plasma.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Mannitol fermentation	Coagulase production
Staphylococcus aureus (25923)	10^2-10^3	luxuriant	>70%	+ (yellow)	+(opaque zone)
Staphylococcus epodermidis (12228)	10^2-10^3	luxuriant	>70%	- (purple)	-

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, 1946, J. Bact., 51:409.
2. Zebovitz, Evans and Nivens, 1955, J. Bact., 70:686.
3. Marwin, 1958, Am. J. Clin. Pathol., 30:470.
4. Esber and Faulconer, 1959, Am. J. Clin. Pathol., 32:192.

Disclaimer :

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