SPECTRUM

The Creative Approach to Bioscience

Mannitol Salt Agar

REF.	Pack size
1418 001	100 gm
1418 002	500 gm

SYMBOLS IN PRODUCT LABELLING

EC REP Authorised Representative	Use by/Expiration Date
IVD For in-vitro diagnostic use	CAUTION. Consult instructions for use
LOT Batch Code/Lot number	Manufactured by
REF Catalogue Number	(Xi) - Irritant
Consult instructions for use	
Temperature Limitation	

Intended Use

Mannitol Salt agar is a selective medium for the isolation and identification of Staphylococcus aureus from clinical specimens (urine,throat swab) and in microbial limit tests.

Background

Chapman formulated Mannitol Salt Agar to isolate staphylococci by inhibiting growth of most other bacterial species with a high salt concentration.Chapman noticed that the addition of 7.5% Sodium Chloride to Phenol Red Mannitol Agar resulted in an improved medium for the isolation of plasma coagulating staphylococci.(coagulase-positive Staph.)
Mannitol Salt agar is used for the detection and enumeration of coagulase positive Staphylococci in milk ,food and other specimens.

Principle

Proteose Peptone and Beef Extract supply essential growth factors and trace nutrients to the growing bacteria. Sodium chloride serves as an inhibitory agent against bacteria other than staphylococci. The 7.5% salt concentration results in partial or complete inhibition of bacteria other than staphylococci. Mannitol fermentation, results in change in the phenol red indicator, (from red to yellow) which helps in the differentiation of staphylococcal species. Coagulase-negative species of staphylococci and micrococci do not ferment mannitol and grow as small red colonies surrounded by red or purple zones. Yellow coloured colonies should be tested for production of coagulase.

Components	gm/Liter
Beef Extract	3.0
Proteose Peptone	8.0
Sodium Chloride	75.0
D-Mannitol	10.0
Phenol Red	0.025
Agar	15.0

Final pH (at 25°C) 7.4 ± 0.2

Preparation, Storage and Stability

Store the dehydrated medium at 10-30°C and use before the expiry date on the label.Store the prepared medium at 2-8°C
After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Procedure

1. Suspend 111.02 g of the powder in 1000 ml distilled water and mix well.

2.Heat with frequent agitation to dissolve the powder completely.

3.Sterilize by autoclaving at 121°C for 15 minutes.

Quality Control

Appearance

1-Dehydrated Appearance : Light pink coloured, homogeneous,free flowing powder.

2-Prepared Appearance : Red coloured, clear to slightly opalescent gel.

3-Cultural Response : Cultural characteristics after 18-48 hours at 30-35°C (As per pharmacopeia or 35± 2°C for clinical specimens hours

Organisms (ATCC)	Growth	Colour of the Colony
Proteus mirabilis	Partial to complete inhibition	–
Staphylococcus aureus	Good to luxuriant	Yellow
Staphylococcus epidermidis	Fair to good	Red
Enterobacter aerogenes	inhibition	–

Interpretation of the results

Staphylococci will grow on this medium, while the growth of most other bacteria will be inhibited. Coagulase-positive staphylococci will produce luxuriant growth of yellow colonies and may have a yellow halo around the colony. Coagulase-negative staphylococci will produce small colorless to pink colonies with no color change to the medium.

Precautions

1-Negative plates should be re-incubated overnight before discarding.

2- Presumptive Staphylococcus aureus should be confirmed with a coagulase test.

3-Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Bibliography

1. Chapman,1945. J. Bact; 50:201.
2. US Pharmacopeial Convention, Inc. 2001. The United States Pharmacopoeia 25/NF 20-2002. The US Pharmacopeial Convention, Inc; Rockville, Md.
3. European Pharmacopoeia. 7.0

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