

Mannitol Salt Broth

Mannitol Salt Broth is used for the selective isolation of presumptive pathogenic Staphylococci.

REF: BS.1/MT01.100.0100	100 Gram	REF: BS.1/MT01.250.0250	250 Gram
REF: BS.1/MT01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Mannitol Salt Broth is prepared as suggested by Chapman (1) and is used for the selective isolation of pathogenic Staphylococci. This medium is recommended for the detection and enumeration of coagulase-positive Staphylococci in milk (2) food (3) and other specimens. Mannitol Salt Broth is used for the isolation of presumptive pathogenic staphylococci. Pathogenic staphylococci ferment mannitol and produce a yellow coloured medium.

METHOD PRINCIPLE

The medium contains beef extract and proteose peptone which makes it very nutritious as they provide essential growth factors and trace nutrients. Many other bacteria except Staphylococci are inhibited by 7.5% sodium chloride. Mannitol is the fermentable carbohydrate source. The differential action of the medium is attributed to D-Mannitol. Staphylococcus aureus ferments mannitol to produce yellow coloured medium. Most coagulase-negative species of Staphylococci and Micrococci do not ferment mannitol and therefore the medium remains red in colour. The colour of the medium is due to the reactivity of phenol red to the pH of the medium; phenol red is red at pH 8.4 and yellow at 6.8. Presumptive Staphylococcus showing yellow coloured medium should be further tested for production of coagulase. A possible S. aureus must be confirmed by the coagulase test. Also the organism should be subcultured to a less inhibitory medium not containing excess salt to avoid the possible interference of salt with coagulase testing or other diagnostic tests (e.g. Nutrient Broth) (4). Few strains of S. aureus may exhibit delayed mannitol fermentation. Negative results should therefore be re-incubated for an additional 24 hours before being discarded (4).

MEDIA COMPOSITION

Item	Formula in g/L
Peptic digest of animal tissue	10
Beef extract	1
Sodium chloride	75
Mannitol	10
Phenol red	0.025

pH 6.8 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated people. Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,...).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Handle specimens and inoculated culture bottles as though capable of transmitting infectious agents. All inoculated culture bottles, specimen collection needles, and blood drawing devices should be decontaminated according to country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the Mannitol Salt Broth material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

STORAGE AND STABILITY

BioScien Mannitol Salt Broth should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within the stated expiry period.

PROCEDURE

Suspend 96.02 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Note : This product contains 7.5% sodium chloride as one of its ingredients. On repeated exposure to air and absorption moisture sodium chloride has tendency to form lumps, therefore we strongly recommend storage in tightly closed containers in dry place away from bright light.

Deterioration

BioScien Mannitol salt broth is Light yellow to pink homogeneous free flowing powder. Prepared medium is Red coloured clear solution in tubes. should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations

SPECIMEN COLLECTION AND PRESERVATION

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (11,12). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10,13). After use, contaminated materials must be sterilized by autoclaving before discarding.

TYPE OF SPECIMEN

Clinical samples
Food and Dairy samples
Environmental samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile Tubes
- Autoclave
- Incubator

Fits your perfection

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact the technical support.

PERFORMANCE CHARACTERISTICS

The following organisms are used by us as part of the quality assurance of the product. The total inoculum challenge for each test organism per bottle is 10 to 50 colony forming units (CFU's).

Test Organisms	Growth	Medium color
Escherichia coli (25922)	Inhibited	-
Staphylococcus aureus subsp. aureus (25923)	Good-luxuriant	Yellow
Staphylococcus epidermidis (12228)	Fair-good	Red

REFERENCES

1. Takao Inoue et al, 1968, Jap. J. Vet. Sci., 30.
2. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippincott Company.
3. Aspinall S. T., Hindle M. A. and Hutchinson D. N., 1992, Eur. J. Clin. Microbiol. Inf. Dis., 11:936.

SYMBOLS IN PRODUCT LABELLING		
IVD For in-vitro diagnostic use		Number of <n> test in the
LOT Batch Code/Lot number	pack	
REF Catalogue Number		Caution
 Temperature Limitation		Do not use if package is damaged
 Expiration Date		Consult Instruction for use
 Manufactured by		