



PRODUCT SPECIFICATION SHEET

Mannitol Salt Broth (DM161)

Intended Use

Mannitol Salt Broth (DM161) is recommended for selective isolation of presumptive pathogenic *Staphylococci*.

Product Summary and Explanation

In 1942, Koch,⁽¹⁾ reported that only *Staphylococci* grow on agar media containing 7.5% sodium chloride. Chapman⁽²⁾ further studied this phenomenon in greater detail and concluded that the addition of 7.5% sodium chloride to phenol red mannitol agar results in an improved medium for the isolation of plasma-coagulating *Staphylococci*. Mannitol Salt Broth is prepared as suggested by Chapman⁽²⁾ 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⁽³⁾ food⁽⁴⁾ and other specimens. Mannitol Salt Broth is used for the isolation of presumptive pathogenic *Staphylococci*.

Principles of the Procedure

Mannitol Salt Broth contains beef extract and proteose peptone which makes it very nutritious as they provide essential growth factors and trace nutrients. High sodium chloride (7.5%) content inhibits many other bacteria except *Staphylococci*. Mannitol is the fermentable carbohydrate source. The differential action of the medium is attributed to D-Mannitol. Phenol red is a pH indicator. The change in 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.

Formula / Liter

Ingredients	Gms / Liter
Proteose peptone	10.00
Beef extract	1.00
Sodium chloride	75.00
D-Mannitol	10.00
Phenol red	0.025
Final pH: 7.4 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.
3. 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.

Directions

1. Suspend 96.02 grams of the medium in one liter of distilled water.
2. Heat if necessary to dissolve the medium completely.
3. Dispense as desired.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

Dehydrated Appearance	Light yellow to pink homogeneous free flowing powder
Prepared Medium	Red coloured clear solution in tubes
Reaction of 9.6% Solution	pH : 7.4 ± 0.2 at 25°C
Gel Strength	Not Applicable





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

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Colour of Medium
1.	<i>Escherichia coli ATCC 25922</i>	$\geq 10^3$	inhibited	--
2.	<i>Staphylococcus aureus ATCC 25923</i>	50 - 100	good-luxuriant	yellow
3.	<i>Staphylococcus epidermidis ATCC 12228</i>	50 - 100	fair-good	red

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to appropriate references for standard test procedures.

Results

1. *Staphylococcus aureus* ferments mannitol to produce yellow coloured medium.
2. Most coagulase-negative species of *Staphylococci* and *Micrococci* do not ferment mannitol and therefore the medium remains red in colour.
3. Presumptive *Staphylococcus* showing yellow coloured medium should be further tested for production of coagulase.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. A possible *S. aureus* must be confirmed by the coagulase test.
2. 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) (M002).
3. Few strains of *S. aureus* may exhibit delayed mannitol fermentation.
4. Negative results should therefore be re-incubated for an additional 24 hours before being discarded.
5. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Mannitol Salt Broth

Product Code : DM161

Available Pack sizes : 500gm

References

1. Koch. 1942. Zentralbl. Bakteriell. Parasitenkd. Abt. I Orig. 149:122.
2. Chapman G.H., 1945, J. Bact., 50:201.
3. Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th ed., APHA, Washington, D.C.
4. Bacteriological Analytical Manual, 1995, Food and Drug Administration, 8th ed., AOAC, International, U.S.A.

Further Information

For further information please contact your local MICROMASTER Representative.





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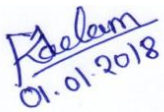




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DM161PSS,QAD/FR/024,Rev.00/01.01.2018

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