



PRODUCT SPECIFICATION SHEET

Mannitol Motility Test Medium (DM1874)

Intended Use

Mannitol Motility Test Medium (DM1874) is recommended for studying mannitol fermentation and motility of bacteria.

Product Summary and Explanation

Mannitol Motility Test Medium is designed to differentiate bacteria on the basis of their motility and ability to ferment mannitol.⁽¹⁾

Principles of the Procedure

Mannitol Motility Test Medium is a highly nutritious medium containing peptic digest of animal tissue that supports luxuriant growth of fastidious bacteria like *Staphylococci*. Potassium nitrate provides additional nutrients and organisms capable of reducing nitrate show increased motility. Semisolid nature of the medium due to 0.3% agar helps to detect motility. Fermentation of mannitol produces acidity in the medium. Phenol red is the pH indicator, which detects acidity by exhibiting a visible colour change from red to yellow.

Formula / Liter

Ingredients	Gms / Liter
Peptic digest of animal tissue	20.00
Mannitol	2.00
Potassium nitrate	1.00
Phenol red	0.04
Agar	3.00
Final pH: 7.6 ± 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.

Directions

1. Suspend 26.04 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Dispense into test tubes.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
5. Cool the tubed medium in an upright position.

Quality Control Specifications

Dehydrated Appearance	Light yellow to pink homogeneous free flowing powder
Prepared Medium	Red coloured clear to slightly opalescent gel forms in tube as butts
Reaction of 2.6% Solution	pH : 7.6 ± 0.2 at 25°C
Gel Strength	Semisolid, comparable with 0.3% Agar gel



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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	Mannitol fermentation	Motility
1.	<i>Escherichia coli</i> ATCC 35218	50 -100	good-luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
2.	<i>Proteus mirabilis</i> ATCC 25933	50 -100	good-luxuriant	negative reaction, no colour change or red	positive, growth away from stabline causing turbidity
3.	<i>Proteus vulgaris</i> ATCC 13315	50 -100	good-luxuriant	negative reaction, no colour change or red	positive, growth away from stabline causing turbidity
4.	<i>Salmonella Typhi</i> ATCC 6539	50 -100	good-luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
5.	<i>Shigella sonnei</i> ATCC 25931	50 -100	good-luxuriant	positive reaction, yellow colour	negative, growth along the stabline, surrounding medium remains clear
6.	<i>Staphylococcus aureus</i> ATCC 25923	50 -100	good-luxuriant	positive reaction, yellow colour	negative, growth along the stabline, surrounding medium remains clear
7.	<i>Staphylococcus epidermidis</i> ATCC 12228	50 -100	good-luxuriant	negative reaction, no colour change or red	negative, growth along the stabline, surrounding medium remains clear

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. Mannitol fermentation is indicated by change in the colour of the medium from red to yellow, while no colour change is observed with non-fermenters.
2. Motile bacteria show a diffuse growth away from the stabline causing turbidity, while non-motile organisms only grow along the stab line.

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. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.



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Packaging

Product Name : Mannitol Motility Test Medium

Product Code : DM1874

Available Pack sizes : 100gm

References

1. MacFaddin J. F., 2000, (Ed.), Biochemical Tests for the Identification of Medical Bacteria, 3rd Ed., Williams and Wilkins, New York.

Further Information

For further information please contact your local MICROMASTER Representative.



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DM1874PSS, QAD/FR/024,Rev.00

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