



PRODUCT SPECIFICATION SHEET

Motility Test Medium (DM171)

Intended Use

Motility Test Medium (DM171) is recommended for detection of bacterial motility.

Product Summary and Explanation

Bacterial motility can be observed directly on microscopic slide or it can be visualized on motility media having agar concentration of 0.4% or less.⁽¹⁾ In 1936, Tittsler and Sandholzer reported on the use of semisolid agar for the detection of bacterial motility.⁽²⁾ Motility Test Medium is a modification of their formulation. Certain species of motile bacteria will show diffuse growth throughout the entire medium, while others may show diffusion from one or two points appearing as nodular outgrowths along the stab. Tittsler and Sandholzer reported tubes incubated for one day gave identical results with the hanging drop method, and incubation for two days permitted demonstration of motility in an additional 4% of cultures tested. Motility can be visualized as a diffused zone of growth flaring out from the line of inoculation.⁽¹⁾ Hanging-drop technique in motility tests has practical difficulties, which is efficiently eliminated by use of culture-based methods using semi-solid media, as in semisolid media; the results obtained are macroscopic and cumulative.

Principles of the Procedure

Motility Test Medium contains tryptose which acts as a source of essential growth nutrients required for bacterial metabolism. Sodium chloride maintains the osmotic equilibrium of the medium. Small amount of agar helps to create a semisolid medium.

Formula / Liter

Ingredients	Gms / Litre
Tryptose	10.00
Sodium chloride	5.00
Agar	5.00
Final pH: 7.2 ± 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, mainly irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 20 grams of the medium in one liter of distilled water/purified water.
2. Heat to boiling to dissolve the medium completely.
3. Dispense into tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.
4. Allow tubed medium to cool in an upright position.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light yellow coloured clear to slightly opalescent gel forms in tubes as butts
Reaction of 2.0% Solution	pH 7.2 ± 0.2 at 25°C
Gel Strength	Semisolid, comparable with 0.5% Agar gel

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

Sr.	Organisms	Results to be achieved
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No.		Inoculum (CFU)	Growth	Colour of colony
1.	<i>Escherichia coli</i> ATCC 25922	50-100	good- luxuriant	positive, growth away from stabline causing turbidity
2.	<i>Enterobacter aerogenes</i> ATCC 13048	50-100	good- luxuriant	positive, growth away from stabline causing turbidity
3.	<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	good- luxuriant	negative, growth along the stabline, surrounding medium remains clear
4.	<i>Salmonella Enteritidis</i> ATCC 13076	50-100	good- luxuriant	positive, growth away from stabline causing turbidity
5.	<i>Staphylococcus aureus</i> ATCC 25923	50-100	good- luxuriant	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

1. Inoculate tubes with a pure culture by stabbing the centre of the column of medium to greater than half the depth.
2. Incubate tubes for 24-48 hours at $35 \pm 2^{\circ}\text{C}$ in an aerobic atmosphere.

Results

1. After incubation, observe the tubes for growth in relation to the stab line. Non-motile organisms grow only along the line of inoculation, while motile organisms spread out from the line of inoculation and may even grow throughout the medium.
2. Negative tubes can be re-incubated at $25 \pm 2^{\circ}\text{C}$ for an additional 5 days, if desired.
3. All weak or equivocal motility results should be confirmed by flagellum stain or by direct wet microscopy (hanging drop).^(3,4)
4. Refer to appropriate references for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at $10 - 30^{\circ}\text{C}$. 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. Many organisms fail to grow deep in semisolid media; inoculating pour plates may be advantageous.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Motility Test Medium

Product Code : DM171

Available Pack sizes : 100gm / 500gm

References

1. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., (Eds.), 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippincott Company.
2. Tittsler R. P. and Sandholzer L. A., 1936, J. Bacteriol., 31:575.





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3. DAmato R. F., and Tomfohrede K. M., 1981, J. Clin. Microbiol., 14 (3), 347-348.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

Further Information

For further information please contact your local MICROMASTER Representative.




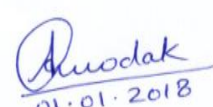

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DM171PSS,QAD/FR/024,Rev.00/01.01.2018

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