PRODUCT SPECIFICATION SHEET

Motility Test Medium (Edwards and Ewing) (DM650)

Intended Use
Motility Test Medium (Edwards and Ewing) (DM650) is recommended for testing motility of enteric bacteria

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. 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.[2] Motility Test Medium is the modification of the original formulation as per Edwards and Ewing and is used for testing motility of *Enterobacteriaceae*.[3] Motility can be visualized as a diffused zone of growth flaring out from the line of inoculation.[1,4,5]

Principles of the Procedure
Motility Test Medium (Edwards and Ewing) contains peptic digest of animal tissue, beef extract which serve as sources 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 / Liter
Peptic digest of animal tissue	10.00
Beef extract	3.00
Sodium chloride	5.00
Agar	4.00
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.

Directions
1. Suspend 22 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Dispense 8 ml amounts in test tubes. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Cool the tubed medium 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 2.2% Solution	pH : 7.4 ± 0.2 at 25°C
Gel Strength	Semisolid, comparable with 0.4% Agar gel

Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Motility

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1.	*Escherichia coli ATCC 25922*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
2.	*Enterobacter aerogenes ATCC 13048*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
Sr. No.	**Organisms**	**Results to be achieved**		
		Inoculum (CFU)	**Growth**	**Motility**
3.	*Klebsiella pneumonia ATCC 13883*	50-100	good-luxuriant	negative, growth along the stabline, surrounding medium remains clear
4.	*Salmonella Enteritidis ATCC 13076*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
5.	*Staphylococcus aureus ATCC 25923*	50-100	good-luxuriant	negative, growth along the stabline, surrounding medium remains clear
6.	*Vibrio cholerae ATCC 15748*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
7.	*Vibrio parahaemolyticus ATCC 17802*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity

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

Test Procedure

1. Bacterial motility can be observed directly by examination of the tubes following incubation.
2. Inoculation is done by stabbing through the centre of the medium.
3. Incubate at appropriate temperature for 18 to 40 hours.
4. Refer appropriate references for specific test procedures.

Results

1. Non-motile organisms grow only along the line of inoculation whereas motile organisms grow away from the line of inoculation or may show growth even throughout the medium.
2. All weak or equivocal motility results should be confirmed by flagellum stain or by direct wet microscopy (hanging drop).[6,7]
3. To enhance the visibility of bacterial growth 2,3,5-Triphenyl Tetrazolium Chloride (TTC) (MS029) may be added. Tetrazolium salts are colourless but are converted into insoluble formazan, a red coloured complex by the reducing properties of growing bacteria.
4. In Motility Test Medium containing tetrazolium, the development of this red colour helps to trace the spread of bacteria from the inoculation line. The motility of *Listeria monocytogenes* is frequently best observed in medium without TTC.
5. Refer appropriate references and test procedures for interpretation of results.

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

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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.

Packaging
Product Name : Motility Test Medium (Edwards and Ewing)
Product Code : DM650
Available Pack sizes : 100gm / 500gm

References

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4. Howard B. J. and Other (Eds.), 1994, Clinical and Pathogenic Microbiology, The C. V. Mosby. Year Book, Inc.
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7. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

Further Information

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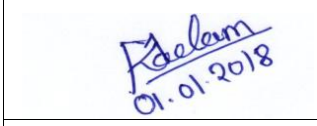		
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