PRODUCT SPECIFICATION SHEET

Listeria Motility Medium (DM322)

Intended Use
Listeria Motility Medium (DM322) is recommended for testing motility of *Listeria monocytogenes*.

Product Summary and Explanation
One of the important determinants in making a final species identification is motility of bacteria. Bacteria move by means of flagella, the number and location of which vary among different species. Most commonly employed medium for detecting motility is the semisolid media in tubes. Motility media have agar concentration of 0.4% or less. Interpretation of the motility test is done by making a macroscopic examination of medium for a diffused zone of growth flaring out from the line of inoculation. *Listeria* species are microaerophilic, gram-positive, asporogenous, non-encapsulated, non-branching, regular, short, motile rods. *Listeria monocytogenes* requires room temperature incubation before motility develops, since in some organisms; flagellar proteins develop more rapidly at lower temperatures (room temperature) such as in *Listeria monocytogenes* and *Yersinia enterocolitica*. Listeria Motility Medium is recommended from the ISO Committee for the determination of motility by *Listeria monocytogenes* in dairy products.[1]

Principles of the Procedure
Listeria Motility Medium contains casein enzymic hydrolysate and peptic digest of animal tissue which act as source of growth nutrients. Agar is the solidifying agents and in this concentration it gives a semisolid media.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	20.00
Peptic digest of animal tissue	6.10
Agar	3.50
Final pH: 7.3 ± 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 29.6 grams of the medium in one litre of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Dispense in tubes.
4. Autoclave at 121°C, 15 lbs pressure for 15 minutes / validated cycle.
5. Allow the 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 2.96% solution	pH : 7.3 ± 0.2
Gel Strength	Semisolid, comparable with 0.35% Agar gel

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Expected Cultural Response: Cultural characteristics observed after an incubation at room temperature (25-30°C) for 24-48 hours.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Motility
1.	*Listeria monocytogenes ATCC 19117*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
2.	*Listeria monocytogenes ATCC 19111*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
3.	*Listeria monocytogenes ATCC 19112*	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
4.	*Staphylococcus aureus 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

For demonstrating the motility of *Listeria monocytogenes* stab inoculate two tubes of semisolid medium and incubate one at room temperature (20 - 25°C) and the other at 35°C. Motility is better observed at room temperature.[2] Refer appropriate references for standard test procedures.

Results

An umbrella-like zone of growth 2 to 5 mm below the surface of the medium is characteristic of *L. monocytogenes*. Motility at 35°C incubation is either absent or extremely sluggish. Refer appropriate references and 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

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 : Listeria Motility Medium
Product Code : DM322
Available Pack sizes : 500gm

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References

1. International Organization for Standardization (ISO), 1993, Draft ISO/DIS 10560.
2. Bailey and Scotts Diagnostic Microbiology, 1986, 7th Ed., The C.V. Mosby Co., St. Louis.

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