

## Technical Information

### Listeria Motility Medium

#### Product Code: DM 2215

**Application:** - Listeria Motility Medium is a semisolid medium recommended for testing motility of *Listeria monocytogenes*.

#### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Peptic digest of animal tissue	6.100
Agar	3.500
Final pH ( at 25°C)	7.3±0.2

\*\*Formula adjusted, standardized to suit performance parameters

#### Principle & Interpretation

Bacterial motility is one of the important features in making species identification. Bacteria move by means of flagella, the number and location of which vary from species to species. Semisolid media in tubes is commonly used for detecting motility. Motility media has agar concentration of 0.4% or less. The motility test is interpreted by macroscopic examination of medium for a diffused zone of growth flaring out along the line of inoculation. *Listeria monocytogenes* requires room temperature incubation before motility develops, because in some organisms; flagellar proteins develop more rapidly at lower temperatures (room temperature) such as in *L. monocytogenes* and *Yersinia enterocolitica*. Listeria Motility Medium is devised in accordance with ISO Committee specification <sup>(1)</sup> for the determination of motility by *L. monocytogenes*.

Casein enzymic hydrolysate and peptic digest of animal tissue act as source of growth nutrients. The motility of *L. monocytogenes* is best demonstrated by stabbing two tubes of semisolid medium and incubating one at room temperature (20 - 25°C) and the other at 35°C. Motility is better observed at room temperature <sup>(2)</sup>. 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.

#### Methodology

Suspend 29.6 grams of powder media in 1000 ml distilled water. Shake well & heat to boiling to dissolve the medium completely.

Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubed medium to cool in an upright position.

#### Quality Control

##### Physical Appearance

Cream to yellow homogeneous free flowing powder

##### Gelling

Semisolid, comparable with 0.35% Agar gel.

##### Colour and Clarity of prepared medium

Light yellow coloured, clear to slightly opalescent gel forms in tubes as butts

##### Reaction

Reaction of 2.96% w/v aqueous solution at 25°C. pH : 7.3±0.2

**pH Range**

7.10-7.50

**Cultural Response/Characteristics**

DM 2215: Cultural characteristics observed after an incubation at room temperature (25-30°C) for 24-48 hours

Organism	Inoculum (CFU)	Growth	Motility
<i>Listeria monocytogenes</i> ATCC 19117	50-100	luxuriant	Positive growth away from stabline causing turbidity
<i>Listeria monocytogenes</i> ATCC 19111	50-100	luxuriant	Positive growth away from stabline causing turbidity
<i>Listeria monocytogenes</i> ATCC 19112	50-100	luxuriant	Positive growth away from stabline causing turbidity
<i>Staphylococcus aureus</i> ATCC 25923	50-100	luxuriant	Negative growth along the stabline surrounding medium remains clear

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

**Prepared Media:** 2-8<sup>o</sup> in sealable plastic bags for 2-5 days.

## Further Reading

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.

## Disclaimer :

User must ensure suitability of the product(s) in their application prior to use.

The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate

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