



## Modified McBride Listeria Agar Base

M891

### Intended Use:

For selective isolation and cultivation of *Listeria monocytogenes*, from foodstuffs, clinical samples etc.

### Composition\*\*

Ingredients	g/ L
Tryptone	5.000
Peptone	5.000
HM peptone B #	3.000
Sodium chloride	5.000
Glycine anhydride	10.000
Lithium chloride	0.500
Phenyl ethanol	2.500
Agar	15.000
Final pH ( at 25°C)	7.3±0.2

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

# Equivalent to Beef extract

### Directions

Suspend 46.00 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Before gelling, aseptically add sterile rehydrated contents of 1 vial of McBride Selective Supplement (FD070). Mix well and pour into sterile Petri plates.

### Principle And Interpretation

The disease listeriosis is a frequent cause of abortions in cattle and sheep. In human, symptoms are manifested as septicemia, encephalitis and circulatory monocytosis (1). In women, *Listeria* may be harboured in the genital tract and may be transmitted transplacentally from infected amniotic fluid and vaginal discharge to infants (2). *Listeria* was first definitively described by Murray et al (3) in connection with an epizootic disease among laboratory-raised guinea pigs and rabbits. Since *Listeria* species are generally associated with animals, outbreaks of listeriosis are usually associated with contaminated dairy products. *Listeria* multiplies over a wide range of temperatures, from 3°C to 45°C, and over a pH range of 5.0 to 9.6. It also survives in food products with pH levels outside these parameters (4). Because of these properties, *Listeria* survives the various food processing techniques (5). Modified McBride Listeria Agar Base differ from McBride Listeria Agar Base in the nutrient source available to *Listeria* species.

Tryptone, peptone and HM peptone B in the medium supply nitrogen, carbon, sulphur and trace nutrients required for the growth of *Listeria*. Phenyl ethyl alcohol is bacteriostatic for gram-negative bacteria as it selectively inhibits DNA synthesis (5). Sodium chloride maintains the osmotic balance of the medium. Glycine inhibits certain gram-negative and gram-positive bacteria including *Escherichia coli* and *Enterococcus faecalis*, the common accompanying contaminants. Lithium chloride also has antibacterial activity. Further selectivity is achieved by the addition of McBride Selective Supplement (FD070).

### Type of specimen

Clinical samples - Blood and body fluid; Food and Dairy samples

### Specimen Collection and Handling:

The detection of *L.monocytogenes* is greatly improved by pre-enrichment in liquid media either by one step or two steps. In one step method (7), infected material is inoculated directly in Listeria Selective Broth Base (M889), while in two steps method (8), infected material is inoculated in Listeria Enrichment Broth Base (UVM) (M890A) and incubated at refrigeration temperature of 4°C for few weeks (cold enrichment), as the organism has the ability to grow in low temperature. It is then inoculated in Fraser Secondary Enrichment Broth Base (M1083), followed by plating onto selective agar such as Modified McBride Listeria Agar. The presumptive *Listeria* colonies are selected under 45° transillumination. *Listeria* colonies are dense white to iridescent white appearing as crushed glass. Small colonies tend to be blue, while non-*Listeria* show yellowish orange colonies that are further purified. After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions :

In Vitro diagnostic Use. For professional use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations :

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3. Further biochemical tests must be carried out for confirmation.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

Cream to yellow homogeneous free flowing powder

### Gelling

Firm, comparable with 1.5% Agar gel

### Colour and Clarity of prepared medium

Light amber clear to slightly opalescent gel forms in Petri plates

### Reaction

Reaction of 4.6% w/v aqueous solution at 25°C. pH : 7.3±0.2

### pH

7.10-7.50

### Cultural Response

Cultural characteristics observed under anaerobic condition with added McBride Selective Supplement(FD070) after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	50-100	none - poor	0-10%
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	none - poor	0-10%
<i>Listeria monocytogenes</i> ATCC 19112	50-100	good-luxuriant	≥50%
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	none - poor	0-10%

\* Corresponding WDCM Numbers

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (9,10).

## Reference

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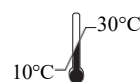
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