

TM 2162 – LISTERIA OXFORD AGAR BASE W/ 1.2% AGAR

INTENDED USE

For isolation of specimen *Listeria* species from food samples in accordance with FDA BAM, 1998

PRODUCT SUMMARY AND EXPLANATION

The genus *Listeria* contains six species; *L. monocytogenes*, *L. innocua*, *L. seeligeri*, *L. welshimeri*, *L. ivanovii*, and *L. grayi*. *Listeria monocytogenes* is the only species of the genus *Listeria* that is important as a human pathogen. The universal occurrence of *L. monocytogenes* in food and the risk of contracting food-borne *L. monocytogenes* listeriosis has been thoroughly reviewed recently and *L. monocytogenes* has been detected in the food processing environment, such as on food contact surfaces and equipment. Other species; *Listeria seeligeri*, *Listeria welshimeri* and *Listeria ivanovii* have been related with animal diseases. *L. ivanovii* and *L. monocytogenes* are pathogenic for mice and other animals. However, only *L. monocytogenes* is commonly associated with human listeriosis. Listeriosis associated infection by *L. ivanovii*, and even *L. seeligeri* is extremely rare in humans.

The preferred standard methodology, and permitted alternative rapid methodologies, to be used for detection and isolation of *Listeria monocytogenes* are as follows. Presumptive contaminated food lots are sampled. Generally, sub-samples are composited if required by FDA field laboratory instructions. Analytical portions (25 g) are pre-enriched for *Listeria* species at 30° C for 4 h in buffered *Listeria* Enrichment broth (BLEB), equivalent to AOAC/IDF dairy products enrichment broth base containing sodium pyruvate. At the fourth hour of the incubation, the selective agents (acriflavin, 10 mg/L; sodium nalidixate, 40 mg/L; optional antifungal, e.g. cycloheximide 50 mg/L) are added. Incubation for selective enrichment is continued at 30° C for a total of 48 h. The enrichment culture is streaked at 24 and 48 h on one of the prescribed differential selective-agar in order to isolate *Listeria* species. The selective and differential media containing esculin and ferric citrate aids in *Listeria* isolation and detection based on esculin hydrolysis. *Listeria* Oxford Medium Base is based on the formulation described by Curtis et al for the selective isolation of *L. monocytogenes* from food specimens, and is recommended by FDA BAM for the same purpose.

COMPOSITION

Ingredients	Gms / Ltr
Peptone, special	23.000
Lithium Chloride	15.000
Sodium chloride	5.000
Corn Starch	1.000
Esculin	1.000
Ammonium Ferric Citrate	0.500
Agar	12.000

PRINCIPLE

This medium consists of Peptone special which serves as the source of essential nutrients to the organisms. Corn starch serves to neutralize the toxic metabolites formed. Lithium chloride and the antibiotics inhibit gram-negative bacteria and most gram-positive organisms but certain strains of Staphylococci may grow as esculin negative colonies. Colistin sulphate, moxalactam and lithium chloride inhibit bacteria other than *Listeria* species. Alternatively, moxalactam can be added which inhibits both gram-positive and gram-negative bacteria. *L. monocytogenes* hydrolyzes esculin to esculetin and dextrose. Esculetin reacts with ferric ions and produces black zones around the colonies.

INSTRUCTION FOR USE

- Dissolve 28.75 grams in 500 ml purified/distilled water.



- Heat to boiling to dissolve the medium completely.
 - Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
 - Cool to 45-50°C and aseptically add the rehydrated contents of 1 vial of Listeria Moxalactam Supplement, Modified.
 - Mix well before pouring into sterile Petri plates.
- Warning: Lithium chloride is harmful. Avoid bodily contact and inhalation of vapors. On contact with skin, wash with plenty of water immediately.

QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : Light yellow to dark yellow homogeneous free flowing powder.
- Appearance of prepared medium** : Dark amber coloured clear to slightly opalescent gel with a blue cast forms in Petri plates.
- pH (at 25°C)** : 7.2 ± 0.1

INTERPRETATION

Cultural characteristics observed with added Listeria Moxalactam supplement, Modified after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Esculin Hydrolysis	Incubation Temperature	Incubation Period
<i>Bacillus subtilis</i>	6633	$\geq 10^3$	Inhibited	0%	-	35°C	24-48 Hours
<i>Enterococcus faecalis</i>	29212	$\geq 10^3$	Inhibited	0%	-	35°C	24-48 Hours
<i>Enterococcus hirae</i>	10541	$\geq 10^3$	Inhibited	0%	-	35°C	24-48 Hours
<i>Escherichia coli</i>	25922	$\geq 10^3$	Inhibited	0%	-	35°C	24-48 Hours
<i>Listeria monocytogenes</i>	19111	50-100	Luxuriant	$\geq 70\%$	Positive reaction, blackening of medium around the colony	35°C	24-48 Hours
<i>Listeria monocytogenes</i>	19112	50-100	Luxuriant	$\geq 70\%$	Positive reaction, blackening of medium around the colony	35°C	24-48 Hours
<i>Listeria monocytogenes</i>	19117	50-100	Luxuriant	$\geq 70\%$	Positive reaction, blackening of medium around the colony	35°C	24-48 Hours
<i>Staphylococcus aureus</i>	25923	50-100	Good	40-50%	Negative reaction	35°C	24-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.













Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Borkstrasse 10, 48163 Moenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
Revision: 08 Nov., 2019