

## TM 2163 – LISTERIA OXFORD MEDIUM BASE, MODIFIED

### INTENDED USE

For isolation and differentiation of *Listeria* species from clinical specimens.

### PRODUCT SUMMARY AND EXPLANATION

*Listeria monocytogenes* is the only species of the genus *Listeria* that is important as a human pathogen. *Listeria seeligeri*, *Listeria welshimeri* and *Listeria ivanovii* have been related with animal diseases. In any case, all the species are pathogenic between the ovine and bovine cattle. Positive diagnosis of listeriosis can be obtained only by the isolation and cultivation of the responsible bacteria from blood or CSF samples of the affected organisms.

Listeria Oxford Medium Base is based on the formulation described by Curtis et al for isolation of *L. monocytogenes* from clinical and food specimens.

### COMPOSITION

Ingredients	Gms / Ltr
Tryptone	8.900
Beef heart extract	2.700
Proteose Peptone, B	4.400
Yeast Extract	4.400
Lithium Chloride	15.000
Sodium Chloride	4.400
Corn Starch	0.900
Esculin	1.000
Ammonium Ferric Citrate	0.500
Agar	15.300

### PRINCIPLE

This medium consists of Tryptone, beef heart extract, proteose peptone B and yeast extract 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. Cycloheximide is used to reduce fungal contamination; cefotetan and fosfomycin are inhibitors of bacterial overgrowth. Acriflavin, colistin sulphate 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. Although the selectivity of the medium is enough to allow the isolation and differentiation by direct surface inoculation, a previous dilution of the inoculum is advisable or even more when the sample is highly polluted.

### INSTRUCTION FOR USE

- Dissolve 57.5 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 10 minutes.



- Cool to 45-50°C and aseptically add the rehydrated contents of 2 vials of Oxford Listeria Supplement or 2 vials of Listeria Moxalactam Supplement Modified.
- Mix well and pour into sterile Petri plates.  
Caution: Lithium chloride is harmful. Avoid bodily contact and inhalation of vapours. 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 ± 0.2

#### INTERPRETATION

Cultural characteristics observed with added Oxford Listeria Supplement or 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%	-	35-37°C	24-48 Hours
<i>Enterococcus faecalis</i>	29212	$\geq 10^3$	Inhibited	0%	-	35-37°C	24-48 Hours
<i>Enterococcus hirae</i>	10541	$\geq 10^3$	Inhibited	0%	-	35-37°C	24-48 Hours
<i>Escherichia coli</i>	25922	$\geq 10^3$	Inhibited	0%	-	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i>	19111	50-100	Luxuriant	$\geq 70\%$	Positive reaction, blackening of medium around the colony	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i>	19112	50-100	Luxuriant	$\geq 70\%$	Positive reaction, blackening of medium around the colony	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i>	19117	50-100	Luxuriant	$\geq 70\%$	Positive reaction, blackening of medium around the colony	35-37°C	24-48 Hours
<i>Staphylococcus aureus</i>	25923	50-100	Good	40-50%	Negative reaction	35-37°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

1. Curtis G. D. W., Mitchell R. G, King A. F., Griffin E. J., 1989, Lett. Appl. Microbiol., 8:95
2. Van Netten P., Peroles I., Van de Mosdik A., Curtis G. D. W., Mossel D. A. A, 1988, Int. J. Food Microbiol., 6:187.
3. Hayes P. S, Feeley J. L, Groves L. M, Ajello G. W. and Fleming D. W, 1986, Appl. Environ. Microbiol., 51:438.
4. Fernandez G. J. F., Dominguez R. L., Vazzuez B. J. A., Rodriguez F.E. F., Briones D. V., Blanco L. J. L., Suarez F. G., 1986, Can. J. Microbiol., 32:149.

 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 Muenster, 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