

## TM 2092 – FRASER BROTH BASE

### INTENDED USE

Recommended as a primary as well as secondary enrichment medium, for the isolation and enumeration of *Listeria monocytogenes* from food and animal feeds.

### PRODUCT SUMMARY AND EXPLANATION

*L.monocytogenes* primarily causes meningitis, encephalitis or septicemia in humans. In pregnant women, *L. monocytogenes* often causes influenza like bacteremic illness that, if untreated, may lead to amnionitis and infection of the fetus, resulting in abortion, still birth or premature birth. Contaminated foods are the primary vehicles of transmission.

Fraser Broth Base is based on the formulation of Fraser and Sperber is used for the detection of *Listeria* species in food products. Fraser Broth Base is formulated so as to provide optimum conditions for the growth of *Listeria*.

### COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Tryptone	5.000
Yeast extract	5.000
Meat extract	5.000
Sodium chloride	20.000
Disodium hydrogen phosphate dihydrate	12.000
Potassium dihydrogen phosphate	1.350
Esculin	1.000
Lithium chloride	3.000

### PRINCIPLE

The medium consists of Peptone, Tryptone, yeast extract, and beef extract which make the media highly nutritive by providing essential nutrients including carbonaceous and nitrogenous substances. Phosphates maintain the buffering capacity of the medium. All *Listeria* species exhibit beta-glucosidase activity which is evident by the blackening of the media.

*Listeria* species hydrolyze esculin (substituted glucoside) to glucose and esculetin. The latter combines with ferric ions of ferric ammonium citrate, resulting in the formation of 6-7 dihydroxycoumarin, a black brown complex. Ferric ammonium citrate also enhances the growth of *L.monocytogenes*. The high salt tolerance (of sodium chloride) of *Listeria* is used as means to inhibit the growth of Enterococci. Lithium chloride is also used to inhibit Enterococci, which also possess the ability to hydrolyze esculin. Growth of accompanying bacteria is largely inhibited by the addition of Nalidixic acid and Acriflavin hydrochloride.

### INSTRUCTION FOR USE

- Dissolve 54.92 grams in 1000 ml purified/distilled water.
- Heat if necessary 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 rehydrated contents of 1 vial of Fraser Selective Supplement and 2 vials of Fraser Supplement to 1000 ml medium for primary enrichment or 1 vial of each to 500 ml medium for secondary enrichment.
- Mix well and dispense in tubes or flasks as desired.

#### QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : Cream to yellow homogeneous free flowing powder.

**Appearance of prepared medium** : Basal medium: Yellow coloured clear solution with slight precipitate. After addition : Fluorescent yellow coloured clear solution with slight precipitate forms in tubes.

**pH (at 25°C)** : 7.2 ± 0.2

#### INTERPRETATION

Cultural characteristics observed on addition of Fraser Supplement and Fraser selective supplement after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Esculin Hydrolysis	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	$\geq 10^4$	Inhibited	-	35-37°C	24-48 Hours
<i>Enterococcus faecalis</i>	29212	$\geq 10^4$	Inhibited	-	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i> subsp. serovar 1	19111	50-100	Good-luxuriant	Positive reaction, blackening of medium	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i>	19112	50-100	Good-luxuriant	Positive reaction, blackening of medium	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i>	19117	50-100	Good-luxuriant	Positive reaction, blackening of medium	35-37°C	24-48 Hours
<i>Listeria monocytogenes</i>	19118	50-100	Good-luxuriant	Positive reaction, blackening of medium	35-37°C	24-48 Hours
<i>Staphylococcus aureus</i>	25923	$\geq 10^3$	Inhibited	-	35-37°C	24-48 Hours

#### PACKAGING:

In pack size of 100 gm and 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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6. Murray P. R., Baron E. J., Jorgensen J. H., Tenover F. C., Tenover F. C., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.
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9. Schuchat A. B., Swaminathan and C. V. Broome, Clin. Microbiol., Rev. 4 : 169-1
10. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

 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 MedNet GmbH Barkstrasse 10, 49163 Moenster, Germany	 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**  
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