

Fraser Broth Base ISO

Intended Use

Fraser Broth Base ISO is recommended as a primary as well as secondary enrichment medium for the isolation and enumeration of *Listeria monocytogenes* in compliance with ISO specifications ISO 11290-1: 2017.

Summary

Listeria monocytogenes is a Gram-positive, non-spore forming, aerobic to facultatively anaerobic, rod shaped bacterium, which exhibits pathogenicity towards humans and other animals. Although not generally recognized as a food-borne pathogen, three recent outbreaks of listeriosis may indicate that this organism is becoming more prevalent as an agent of food-borne disease. Fraser Broth Base and Fraser Supplements are based on the formulation of Fraser and Sperber. Fraser supplements results in a higher detection rate of *Listeria monocytogenes*.

Principle

Casein enzyme hydrolysate, peptic digest of animal tissue, meat extract and yeast extract serves as a source of carbon, nitrogen, vitamins and minerals. Disodium phosphate and mono potassium phosphate are buffering agents. Addition of ferric ammonium citrate in the medium helps to differentiate the esculin hydrolysis, resulting in the blackening of the medium by *Listeria* species. Lithium chloride and high salt concentration makes the medium selective for *Listeria* species.

Formula*

Ingredients	g/L
Sodium chloride	20.0
Disodium hydrogen phosphate	9.57
Casein enzymic hydrolysate	5.0
Peptic digest of animal tissue	5.0
Meat extract	5.0
Yeast extract	5.0
Lithium chloride	3.0
Monopotassium phosphate	1.35
Esculin	1.0
Final pH (at 25°C)	7.2 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability

Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen

Food and Dairy samples
Water samples

Specimen Collection and Handling

Ensure that all samples are properly labelled.

Follow appropriate techniques for handling samples as per established guidelines.

Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.

The samples must be stored and tested within the permissible time duration.

After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 54.92 g of the powder in 1000 mL purified / distilled water.
2. Gently heat to boiling with gentle swirling and dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Cool to 45°C-50°C and aseptically add 2 vials of rehydrated Fraser supplement (204060360010) and if required, add one vial of rehydrated Fraser Selective supplement ISO (204060370005) to make the medium selective.
5. Mix well and dispense as desire.

Warning: Lithium chloride is harmful. Avoid bodily contact and inhalation of vapours. On contact with skin, wash with plenty of water immediately.

Quality Control

Dehydrated Appearance: Cream to yellow coloured, homogeneous, free flowing powder.

Prepared Appearance: Basal medium: Yellow coloured clear solution with slight precipitate.

After addition: Fluorescent yellow coloured clear solution with slight precipitate forms in tubes.

Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is observed after an incubation at 30°C-35°C for 18-48 hours.

Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 18 hours.

Organism (ATCC)	Growth	Esculin Hydrolysis
<i>Listeria monocytogenes</i> strain Li 23 (19114)	Good	Positive (Blackening of medium)
<i>Listeria monocytogenes</i> serotype 4b (19115)	Good	Positive (Blackening of medium)
<i>Enterococcus faecalis</i> (29212)	Partial Inhibition	Negative
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> (25923)	Partial Inhibition	Negative
<i>Escherichia coli</i> (25922)	Partial Inhibition	Negative

Interpretation of Results

Examine the agar plates for suspected colonies. For further identification and confirmation of *Listeria* species, consult appropriate references.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions/Limitations

1. Since *Listeria* spp. other than *L. monocytogenes* can grow on these media, biochemical and serological testing should be done to identify *L. monocytogenes*.
2. Poor growth and a weak esculin reaction may be seen after 40 hours incubation for some Enterococci.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Nieman R. E., and Lorber B., 1980, Rev. Infect. Dis. 2 : 207-227
2. Schuchat A. B., Swaminathan and C. V. Broome, Clin. Microbiol., Rev. 4 : 169-183
3. Murray P. R., Baron E. J., Jorgensen J. H., Pfaller M. A., Tenover F. C., Tenover J. C., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.
4. Fraser and Sperber, 1988, J. Food Prot., 51:762-765. 5. Cowart R. E. and Foster B. G., 1985, J. Infect. Dis.; 151:172.
5. Data on file: Microexpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:**Cat No.**

201060130500

Product description

Dehydrated Culture Media

Pack Size

500 g

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.
