

TMF 002 – HALF FRASER BROTH

INTENDED USE

For collection and shipment of clinical specimen

PRODUCT SUMMARY AND EXPLANATION

Half Fraser Broth is recommended for the primary enrichment and enumeration of *Listeria* spp. from food and animal feeds. This medium is made selective for *Listeria* spp. by adding antimicrobial agents like acriflavine and nalidixic acid with the basal medium.

COMPOSITION

Ingredients	Gms/Ltr
Sodium Chloride	20.000
Disodium hydrogen phosphate dihydrate	9.600
Enzymatic digest of animal tissues	5.000
Enzymatic digest of casein	5.000
Yeast extract	5.000
Meat Extract	5.000
Lithium Chloride	3.000
Potassium dihydrogen phosphate	1.350
Esculin	1.000
Ferric Ammonium citrate	0.500
Acriflavine Hydrochloride	0.0125
Nalidixic Acid Sodium Salt	0.010

PRINCIPLE

This medium contains Enzymatic digest of animal tissue, Enzymatic digest of casein, yeast extract and Meat extract which provides essential nutrients like carbon and nitrogenous compounds including vitamins, amino acids and trace ingredients. Phosphates help to maintain the buffering capacity of the medium. All *Listeria* species exhibit beta-glucosidase activity which is evident by the blackening of the medium. *Listeria* species hydrolyze the esculin to form esculetin, which further reacts with the ferric ions of ferric ammonium citrate to result in a visible, black brown precipitate. Ferric ammonium citrate also enhances the growth of *L.monocytogenes*. The high concentration of sodium chloride acts as an inhibitory agent for Enterococci spp., simultaneously allowing the selective growth of *Listeria* spp. Lithium chloride is also used to inhibit Enterococci, which also have the ability to hydrolyse the esculin. Addition of Nalidixic acid and Acriflavin hydrochloride largely helps in inhibiting the growth of accompanying bacteria. The tubes showing blackening after incubation should be sub cultured on *L.mono* Differential Agar base (TM 1443) or Chromogenic *Listeria* Agar Base (Modified) (TM 1634) for complete identification.

INSTRUCTION FOR USE

Label the ready to use bag. Inoculate the sample and incubate at specified temperature and time.

Note: It is a ready to use broth media in bag. The medium is pre sterilized; hence the sterilization is not required.

QUALITY CONTROL SPECIFICATIONS

Appearance of Prepared media : Sterile yellow colour medium in a plastic bottle
pH (at 25°C) : 7.2 ± 0.2
Sterility test : Passes release criteria

INTERPRETATION

Culture Characteristics observed after incubation at $30 \pm 1^\circ\text{C}$ for 25 ± 1 hours. Further subculture is carried out on L.mono Differential Agar base (TM 1443) at $37 \pm 1^\circ\text{C}$ for 44 ± 4 hours or on Tryptone Soya Agar (TM 345) at $37 \pm 1^\circ\text{C}$ and examined for growth at 24 ± 2 hours.

Microorganism	ATC C	Inoculum (CFU/ml)	Growth	Esculin hydrolysis	Recovery on TM 1443	Colour of colony on TM 1443	Recovery on TM 345
<i>Listeria innocua</i>	33090	50-100	Luxuriant	Positive reaction, Blackening	>10 cfu	Blue green colonies w/opaque halo	Not applicable
<i>Listeria monocytogenes</i>	35152	50-100	Luxuriant	Positive reaction, Blackening	>10 cfu	Blue green colonies w/opaque halo	Not applicable
<i>Enterococcus faecalis</i>	29212	≥ 1000	Partial to Complete Inhibition	-	-	-	< 100 colonies
<i>Enterococcus faecalis</i>	19433	≥ 1000	Partial to Complete Inhibition	-	-	-	< 100 colonies
<i>Escherichia coli</i>	8739	50-100	Inhibition	-	-	-	Total inhibition
<i>Escherichia coli</i>	25922	50-100	Inhibition	-	-	-	Total inhibition

PACKAGING:

In pack size of 05 liters.

STORAGE

On receipt, store bags in the dark at $10-25^\circ\text{C}$. Avoid freezing and overheating. Do not open until ready to use. Minimize exposure to light. Bag media stored as labeled until just prior to use may be inoculated up to the expiration date and incubated for the recommended incubation times. Allow the medium to warm to room temperature before inoculation.

DISPOSAL

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

REFERENCES

1. Fraser, J.A. and Sperber, W.H. 1988. J. Food Protect. 51: 762-765.

2. McClain, D. and Lee, W.H. 1988. J. Assoc. Off. Anal. Chem. 71: 660-664.
3. ISO NORMATIVE 11290-1. 1997. Horizontal method for the detection and enumeration of *Listeria monocytogenes* Part 1: Detection Method.
4. Downes, F.P. and Ito, K., (Ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association,

GMP

Good Manufacturing
Practices Certified

Best Before

QTY.

Quantity

REF

Catalogue Number



Manufacturer



Temperature Unit

LOT/
B. NO.

Lot / Batch Number

Consults Instructions
for UseQR
Code

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

***For Lab Use Only**

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