TM 2447 – HALF FRASER BROTH (ISO 11290-1:2017)

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. The culture medium is formulated according to specification laid down in ISO 11290. 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 helps 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
- Dissolve 55.47 grams in 1000 ml distilled water.
- Gently heat to boiling with gentle swirling and dissolve the medium completely.
- Do not autoclave the medium.

- Cool to 45-50°C.
- Mix well and dispense into sterile tubes or flasks as desired.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow coloured homogeneous free flowing powder
Appearance of prepared medium	: Yellow colored clear solution (may have slight precipitate)
pH (at 25°C)	: 7.2 ± 0.2

INTERPRETATION

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

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

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 below 25°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.

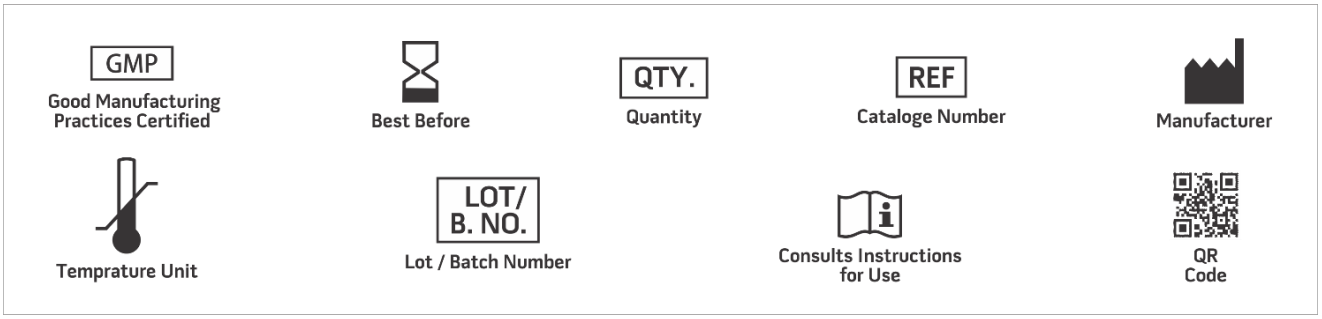
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. 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,



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

***For Lab Use Only**

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