Dehydrated Culture Media
Instructions for Use

HALF-FRASER BROTH BASE (M164)

Dehydrated Culture Media

USE: Half-Fraser Broth Base with Supplement is used for the selective enrichment of *Listeria monocytogenes*.

DESCRIPTION: Half Fraser Broth is a modification of Fraser Broth which contains half of the concentration of nalidixic acid and acriflavine hydrochloride to aid in the recovery of stressed cells. Half Fraser Broth is used as the primary enrichment broth in the ISO methodology[5] for the detection of *Listeria*.

Fraser Broth Base and Fraser Broth Supplement are based on the Fraser Broth formulation of Fraser and Sperber.[1] The medium is used in the rapid detection of *Listeria* from food and environmental samples. Demi-Fraser Broth Base is a modification of Fraser Broth Base in which the nalidixic acid and acriflavine concentrations have been reduced to 10 mg/L and 12.5 mg/L respectively.[2] Peptone, beef extract, and yeast extract provide carbon and nitrogen sources and the cofactors required for good growth of *Listeria*. Sodium phosphate and potassium phosphate buffer the medium. Selectivity is provided by lithium chloride, nalidixic acid, and acriflavine. The high sodium chloride concentration of the medium inhibits growth of enterococci. All *Listeria* species hydrolyze esculin, as evidence by a blackening of the medium. This blackening results from the formation of 6,7 dihydroxycoumarin, which reacts with the ferric ions.[1] Ferric ions are added to the final medium as ferric ammonium citrate in Fraser Broth Supplement. Some molecular detection methodologies do not require supplementation with Ferric Ammonium Citrate.

FORMULA:

Proteose Peptone	5.0 g/L
Beef Extract	5.0 g/L
Meat Peptone	5.0 g/L
Casein Peptone	5.0 g/L
Sodium Chloride	20.0 g/L
Disodium Phosphate	12.0 g/L
Monopotassium Phosphate	1.35 g/L
Esculin	1.0 g/L
Nalidixic Acid	10 mg/L
Acriflavine HCl	12.5 mg/L
Lithium Chloride	3.0 g/L
Total	57.37 g/L

Note: Medium may be adjusted and/or supplemented as required to meet performance criteria.

Fraser Broth Supplement:
Per 10mL Vial

Ferric Ammonium Citrate	0.5 g/L

Final pH: 7.2 ± 0.2 at 25°C

PHYSICAL APPEARANCE:
Dehydrated Appearance – Tan, free-flowing, homogeneous.
Prepared Appearance – Medium amber, clear to slightly opalescent with a fine precipitate.

PROCEDURE: Mix 57.37 grams of the medium in one liter of purified water. Autoclave at 121°C for 15 minutes. Aseptically add 10 mL Fraser Broth Supplement. Mix well. Test samples using stable, typical control cultures.

EXPECTED RESULTS: Cultural response after 18-48 hours at 35°C.

Microorganism	CFU	Growth	Esculin Reaction
E. faecalis ATCC™ 29212	10^3-2x10^3	-	-
E. coli ATCC™ 25922	10^3-2x10^3	-	-
L. monocytogenes ATCC™ 19114	10^2-10^3	+	blackening
S. aureus ATCC™ 25923	10^3-2x10^3	-	-

STORAGE: Store the product at 2-30°C protected from moisture and light for up to the expiration date.

LIMITATIONS: For laboratory use only. The dehydrated medium should be discarded if there are any changes in the color or if it is no longer free flowing.

SIZES AVAILABLE: M1642 (500 g), M1643 (2 kg), M1644 (10 kg), M164-20 (20 kg)

PACKAGING: Additional configurations are available upon request.

REFERENCES:

1. Fraser J.A. and Sperber W.H. 1988. J. Food Protect. 51, No.10, 762-765.
2. McClain D. and Lee W.H. 1988. J. Assoc. Off. Ana. Chem. 71, No.3, 660-664.
3. Cowart R.E. and Foster B.G. 1985. J. Infect. Dis. 151, 721-730.
4. Partis L., Newton K., Marby J. and Wells R.J. 1994. Appl. Env. Microbiol. 60, 1693-1694.
5. Microbiology of Food and Animal Feeding Stuffs – Horizontal method for the detection and enumeration of *Listeria monocytogenes* Part 1: Detection Method. BS EN ISO 11290:1 1997.

Millennium LifeSciences, Inc.
CultureMediaConcepts®
970 E. Orangethorpe Ave, Unit A
Anaheim, CA 92801
TEL: (714) 773-1726
FAX: (714) 773-1793