Culture Media Concepts®

Dehydrated Culture Media
Technical Information

# HALF-FRASER BROTH G594

## SAMPLEREADY™ GAMMA IRRADIATED SOLUBLE MEDIA POUCH

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

**DESCRIPTION**: 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 evidenced by a blackening of the medium. This blackening results from the formation of 6,7 dihydroxycoumarin, which reacts with ferric ions.[1] Ferric ions are added as ferric ammonium citrate. 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.

**FORMULA*** per Liter

| | |
|---|---|
| Proteose Peptone | 5.0g |
| Beef Extract | 5.0g |
| Meat Peptone | 5.0g |
| Casein Peptone | 5.0g |
| Sodium Chloride | 20.0g |
| Disodium Phosphate | 12.0g |
| Monopotassium Phosphate | 1.35g |
| Ferric Ammonium Citrate | 0.5g |
| Esculin | 1.0g |
| Lithium Chloride | 3.0g |
| Nalidixic Acid | 10mg |
| Acriflavine HCl | 12.5mg |
| **Total** | **57.9g** |

*Adjusted and/or supplemented as required to meet performance criteria.

**Final pH**: 7.2 ± 0.2 at 25°C

**PREPARATION**: Soluble Media Pouches are hermetically sealed in a Mylar Bag. Aseptically open the Mylar Bag and carefully remove a Media Pouch using sterile forceps or tweezers. The Pouches are single use. Once removed from the Mylar Bag the Pouches should be used immediately. Mix the Media Pouches in warm Purified or Sterile water with repeated stirring to dissolve completely. Use one Liter of Purified or Sterile water per 57.9g of dry media in the Soluble Pouch. When completely dissolved, the Half Fraser Broth should be free of contamination and ready for testing applications. Testing should include measuring for pH and testing performance with Quality Control Organisms.

**QUALITY CONTROL SPECIFICATIONS**:

1. The Mylar Bag is heretically sealed.
2. The Dissolvable Pouch is dry and the inclusive powder is beige and free flowing.
3. Visually the prepared medium is light amber, opalescent, with a slight to moderate precipitate.
4. Expected cultural response after 24-48 hours at 35°C.

| Microorganism | CFU | Growth | Blackening |
|---|---|---|---|
| *L. monocytogenes* ATCC™ 19114 | 30 – 300 | + | + |
| *E. coli* ATCC™ 25922 | 30 – 300 | Inhibition | - |
| *L. monocytogenes* ATCC™ 19115 | 30 – 300 | + | + |
| *S. aureus* ATCC™ 25923 | 30 – 300 | Inhibition | - |

**STORAGE**: Store the sealed Mylar Bag containing the Dissolvable Pouches in a cool dry environment at 2 to 30°C. Once the Mylar bag is opened, use all pouches within the bag as soon as possible. The unused pouches in the Mylar Bag can be stored for the duration of the shelf life, if the Bag is properly sealed and stored. The Dissolvable Pouches should be discarded if there has been a change from the original light beige color, or inclusive powder is not free flowing.

**LIMITATIONS AND PRECAUTIONS:** Soluble film will dissolve in warm water (37°C to 42°C) within minutes with moderate agitation; however culture media may take up to an hour to completely dissolve. Use prepared media within 3 hours for best results.

FOR LABORATORY USE ONLY

**SIZES AVAILABLE**: 5.2g (90ml), 13g (225ml), 29g (500ml) 58g (1 Liter)

## 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. Anal. 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



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