



## PRODUCT INFORMATION

Demi Fraser Broth Complete (ISO)

Cat. No. D04-122

### DESCRIPTION

Listeria Demi-Fraser Broth is a selective enrichment medium designed for the detection and enumeration of *Listeria monocytogenes* and other *Listeria* species in food products—including milk and dairy—as well as environmental samples. This formulation complies with ISO 11290 standards.

It is a modified version of Fraser Broth, with reduced concentrations of nalidixic acid and acriflavine, both of which are included in the base formula. Selective enrichment is essential due to the typically low numbers of *Listeria* and the presence of competing microorganisms.

The medium contains Enzymatic digests of casein, animal tissues, and meat extract for essential nutrients, Yeast extract as a rich source of B-group vitamins, Potassium phosphates for buffering capacity, Ferric ammonium citrate, which enhances *Listeria monocytogenes* growth and reacts with esculin hydrolyzed by *Listeria* species, producing a characteristic blackening of the medium and Lithium chloride, which inhibits enterococci that may also hydrolyze esculin.

### FORMULA (g/L)

Enzymatic digest of casein	5.0 g	Esculin	1.0 g
Ferric ammonium citrate	0.5 g	Beef extract	5.0 g
Nalidixic acid	0.01 g	Potassium dihydrogen phosphate	1.35 g
Sodium chloride	20.0 g	Yeast Extract	5.0 g
Enzymatic digest of animal tissues	5.0 g	Lithium chloride	3.0 g
Disodium hydrogen phosphate dihydrate	12.0 g	Acriflavine hydrochloride	0.0125g

Final pH: 7.2 ± 0.2 at 25 °C

\*Grams per liter may be adjusted or formula supplemented to obtain desired performance.

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## PREPARATION

Mix 57.9 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in an autoclave at 121 °C for 15 minutes. Cool to 45-50 °C. Homogenize gently and dispense into sterile containers

Detection of *Listeria monocytogenes* and *Listeria* spp. according to ISO 11290:

- Primary enrichment: Weigh 25 g (or 25 ml) of the sample and add 225 ml of *Listeria* ½ Fraser Broth. Homogenize and incubate at 30 °C for 25±1 hours. - Secondary enrichment: Inoculate 0,1 ml of the incubated previous medium (regardless of its color) in 10 ml of Fraser Broth. Incubate at 37 °C for 24±2 hours under aerobic conditions.

- Plating out and identification: From the primary enrichment culture, inoculate the *Listeria* Chromogenic Agar Base acc. to Ottaviani and Agosti (ALOA), Cat. L12-133, and the other selective medium of the laboratory, to obtain well separated colonies. From the secondary enrichment culture, repeat the procedure, inoculate the surface of the *Listeria* Chromogenic Agar Base acc. to Ottaviani and Agosti and the other selective medium. Incubate *Listeria* Chromogenic Agar according to Ottaviani and Agosti for a total of 48±2 h.

- Confirmation: Select the presumptive colonies and carry out confirmatory tests for *L. monocytogenes* or *Listeria* spp.

## QUALITY CONTROL SPECIFICATIONS

1. The powder is homogenous, free flowing and beige.
2. Visually the prepared medium is Amber
3. Expected cultural response according to ISO 11133:  
Incubation conditions: Productivity and Selectivity (30±1 °C / 25±1 h)  
Inoculation conditions: Target microorganisms (10000 CFU) / Selectivity (10<sup>4</sup>-10<sup>6</sup> CFU)

ORGANISM	GROWTH	REACTION
<i>Enterococcus faecalis</i> ATCC 19433	<100 colonies on TSA	-
<i>Escherichia coli</i> ATCC 25922	Total inhibition on TSA	-
<b><i>Listeria monocytogenes</i> ATCC 13932</b> + <i>Enterococcus faecalis</i> ATCC 19433 + <i>Escherichia coli</i> ATCC 25922	>10 colonies on Agar <i>Listeria</i> according to Ottaviani and Agosti (ALOA)	Blue-green colonies with opaque halo
<b><i>Listeria monocytogenes</i> ATCC 35152</b> + <i>Enterococcus faecalis</i> ATCC 19433 + <i>Escherichia coli</i> ATCC 25922	>10 colonies on Agar <i>Listeria</i> according to Ottaviani and Agosti (ALOA)	Blue-green colonies with opaque halo

<b><i>Listeria monocytogenes</i> ATCC 19119</b>	>10 colonies on Agar Listeria	Blue-green
+ <i>Enterococcus faecalis</i> ATCC 19433 +	according to Ottaviani and	colonies with
<i>Escherichia coli</i> ATCC 25922	Agosti (ALOA)	opaque halo

## STORAGE

Store the sealed bottle containing the dehydrated medium at 2 to 30°C. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect it from moisture and light. The dehydrated medium should be discarded if it is not free flowing or if the color has changed from the original color.