Technical Data Sheet

Fraser Broth in 10ml Tubes

Ordering number: 1.46208.0020 / 1.46208.0100

For the primary and secondary selective enrichment of Listeria spp. from food and animal feed as well as from environmental samples and other materials.

This culture medium complies with the specifications given by APHA.

Mode of Action

The high nutrient content and the large buffer capacity creates optimum growth conditions for Listeria. The growth of accompanying bacteria is largely inhibited by lithium chloride, nalidixic acid and acriflavine hydrochloride. The detection of the ß-D-glucosidase activity is possible by the addition of aesculin and ammonium iron(III) citrate forming a black complex of aesculin iron(III) ions. But this reaction is not exclusive to Listeria spp, so that every primary and secondary enrichment in Fraser broth has to be sub-cultured on selective plating media.

Typical Composition

Specified		ReadyTube™ 10 Fraser Broth	
Enzymatic Digest of Animal Tissues	5 g/l	Enzymatic Digest of Animal Tissues	5 g/l
Enzymatic Digest of Casein	5 g/l	Enzymatic Digest of Casein	5 g/l
Meat Extract	5 g/l	Meat Extract	5 g/l
Yeast Extract	5 g/l	Yeast Extract	5 g/l
NaCl	20 g/l	NaCl	20 g/l
Na_2HPO_4 x 2 H_2O	12 g/l	Na_2HPO_4 x 2 H_2O	12 g/l
KH_2PO_4	1.35 g/l	KH_2PO_4	1.35 g/l
Aesculin	1 g/l	Aesculin	1 g/l
LiCl	3 g/l	LiCl	3 g/l
Acriflavine Hydrochloride	0.025 g/l	Acriflavine Hydrochloride	0.025 g/l
Nalidixic Acid Sodium Salt	0.02 g/l	Nalidixic Acid Sodium Salt	0.02 g/l
Ammonium Iron (III) Citrate	0.5 g/l	Ammonium Iron (III) Citrate	0.5 g/l
Water	1000 ml/l	Water	1000 ml/l
pH at 25 °C	7.2 ± 0.2	pH at 25 °C	7.2 ± 0.2

Application and Interpretation

Depend on the purpose for which the medium is used. Incubate for the primary enrichment step the inoculated Half Fraser broth under aerobic conditions at 29-31 °C for 22-26 h.

Transfer 0.1 ml material from the resulting culture (regardless of its color) to the secondary enrichment culture medium, e.g. 10 ml Fraser broth.

Incubate for the secondary enrichment step the inoculated Fraser broth under aerobic conditions, at 36-38 °C for 46-50 h.

From the culture obtained in the primary and the secondary enrichment culture selective solid media are inoculated.

Storage and Shelf Life

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at +2 °C to +8 °C.

The testing procedures as described on the CoA can be started up to the expiry date printed on the label.

Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 °C, disinfect, incinerate etc.).

Quality Control

Function	Control strains	Incubation	Method of control	Criteria	Expected results
Productivity	*Listeria monocytogenes* 1/2a ATCC 35152 + *Escherichia coli* ATCC 25922 + *Enterococcus faecalis* ATCC 29212	22-26 h at 36-38 °C	Qualitative	>10 colonies on Agar Listeria according to Ottaviani and Agosti	Blue-green colonies with opaque halo
	Listeria monocytogenes 4b ATCC 13932 + *Escherichia coli* ATCC 8739 + *Enterococcus faecalis* ATCC 19433				

Function	Control strains	Incubation	Method of control	Criteria	Expected results
Selectivity	*Escherichia coli* ATCC 8739	22-26 h at 29-31 °C	Qualitative	Inhibition (< 100 CFU) Tryptic Soy Agar (TSA)	-
	Escherichia coli ATCC 25922				
	Enterococcus faecalis ATCC 19433			< 100 colonies on Tryptic Soy Agar (TSA)	
	Enterococcus faecalis ATCC 29212				

Please refer to the actual batch related Certificate of Analysis.

The performance test is in accordance with the current version of EN ISO 11133

Literature

APHA (2015): Compendium of Methods for the Microbiological Examination of Foods. 5th ed. American Public Health Association, Washington, D.C.

Beumer, R.R. and Curtis, G.D.W. (2012): Culture media and Methods for the isolation of *Listeria monocytogenes*. In: Handbook of Culture Media for Food and Water Microbiology. (Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. eds). pp. 115-129. Royal Society of Chemistry, Cambridge, UK.

Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. (2012): Handbook of Culture Media for Food and Water Microbiology, pp. 762-764. Royal Society of Chemistry, Cambridge, UK.

Fraser, J. A. and Sperber, W. H. (1988): Rapid detection of *Listeria spp*. in food and environmental samples by esculin hydrolysis. J. Food Prot. 51: 762-765.

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs -- Horizontal method for the detection and enumeration of *Listeria monocytogenes* - Part 1: Detection method -- Amendment 1: Modification of the isolation media and the haemolysis test, and inclusion of precision data.

ISO International Standardisation Organisation. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media. EN ISO 11133:2014.

Ordering Information

Product	Cat. No.	Pack size	Other pack sizes available
ReadyTube™ 10 Fraser	1.46208.0020	20 x 10 ml	100 x 10 ml
ReadyTube™ 225 Half Fraser	1.46476.0006	6 x 225ml	
ReadyPlate™ CHROM Listeria Agar	1.46186.0020	20 x 90 mm	100 x 90 mm
GranuCult™ Half Fraser Broth (Base) with Antibiotics	1.00025.0500	500 g	
GranuCult™ Fraser Broth (Base) with Antibiotics	1.10398.0500	500 g	
FRASER Listeria Selective Supplement	1.00093.0010	10 x 1 vial	
FRASER Listeria Ammonium Iron (III) Supplement	1.00092.0010	10 x 1 vial	
Chromocult® Listeria Agar Enrichment Supplement	1.00439.0010	10 x 1 vial	
Chromocult® Listeria Agar Selective Supplement	1.00432.0010	10 x 1 vial	
Chromocult® Listeria Agar (Base) acc OTTAVIANI and AGOSTI	1.00427.0500	500 g	

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