Technical Data Sheet

EcoCult®

UVM Listeria selective enrichment broth modified acc. USDA-FSIS

Ordering number: 1.40183.5000 / 1.40183.9010

For the selective enrichment of *Listeria monocytogenes* from red meat, poultry, ready-to-eat *Siluriformes* (fish) and egg products, and environmental samples.

UVM Listeria selective enrichment broth modified acc. USDA-FSIS is also known as Modified University of Vermont Medium (UVM, also known as UVM1).

This culture medium complies with the specifications given by USDA-FSIS MLG.

Mode of Action

The combination of various peptones, extracts, salts, and buffer substances enable very good growth of *Listeria* spp. The growth of accompanying bacteria is largely inhibited by nalidixic acid and acriflavine hydrochloride.

Typical Composition

Specified by USDA-FSIS MLG 'Modified UVM broth'		**EcoCult® UVM Listeria selective enrichment broth modified acc. USDA-FSIS**	
Proteose Peptone	5 g/l	Proteose Peptone	5 g/l
Tryptone	5 g/l	Tryptone	5 g/l
Lab Lemco Powder*	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
KH_2PO_4	1.35 g/l	KH_2PO_4	1.35 g/l
Na_2HPO_4	12 g/l	Na_2HPO_4	12 g/l
Esculin	1 g/l	Esculin	1 g/l
Nalidixic acid (2% in 0.1 Mol NaOH)	1 ml	Nalidixic acid	0,02 g/l
Acriflavin	0.012 g/l	Acriflavin	0.012 g/l
Water	1000 ml/l	Water	n/a
pH at 25 °C	7.2 ± 0.2	pH at 25 °C	7.2 ± 0.2

* Lab Lemco Powder is the commercial name of a meat extract.

Preparation

Dissolve 54.4 g in 1 liter of purified water and autoclave 15 minutes at 121 °C.

The dehydrated medium is a powder with yellow colour.

The prepared medium is clear to turbid and yellowish-brown. The pH value at 25 °C is in the range of 7.0 – 7.4.

Experimental Procedure and Evaluation

Depends on the purpose for which the medium is used.

In general, incubate the inoculated broth, at (30 ± 2 °C) under aerobic conditions as given by USDA-FSIS MLG Method No. 8 for

- meat, poultry, *Siluriformes*, and egg products: 20-26 h;

- programs allowing compositing of five product subsamples: 23-26 h;

- environmental sponge samples: 20-26 h;

- environmental aqueous chilling solutions and surface rinse solutions: 20-24 h.

Follow the subsequent steps as given by USDA-FSIS.

Storage

Store at +10 °C to +30 °C, dry and tightly closed. Do not use clumped or discolored medium. Protect from UV light (including sun light). For *in vitro* use only.

According to Corry et al., the self-prepared UVM can be stored on closed containers at (5 ± 3 °C) in the dark and protected against evaporation for up to 7 days.

Quality Control

Function	Control strains	Incubation	Method of control	Criteria	Expected results
Productivity	*Listeria monocytogenes* ATCC® 13932 [WDCM 00021] + *Staphylococcus aureus* ATCC® 6538 [WDCM 00032]	(20–16 h) at (30 ± 2 °C)	Qualitative	>10 colonies on Listeria agar acc. OTTAVIANI and AGOSTI acc. ISO 11290	Blue-green colonies with opaque halo on Listeria agar acc. OTTAVIANI and AGOSTI acc. ISO 11290
	Listeria monocytogenes ATCC® 35152 [WDCM 00109] + *Staphylococcus aureus* ATCC® 6538 [WDCM 00032]				
Selectivity	*Staphylococcus aureus* ATCC® 6538 [WDCM 00032]	(20-16 h) at (30 ± 2 °C)	Qualitative	<100 colonies on Tryptic Soy Agar (TSA)	-
	Bacillus cereus ATCC® 25922 [WDCM 00001]				

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

ISO International Standardisation Organisation. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media + Amendment 1 + Amendment 2. EN ISO 11133:2014/Amd1:2018/Amd2:2020.

USDA-FSIS (2019): Microbiology Laboratory Guidebook Method No. 8.11: Isolation and Identification of *Listeria monocytogenes* from Red Meat, Poultry, Ready-To-Eat *Siluriformes* (Fish) and Egg Products, and Environmental Samples. United States Department of Agriculture – Food Safety and Inspection Service. Athens, USA.

USDA-FSIS (2017): Microbiology Laboratory Guidebook Appendix 1.09 Media and Reagents. United States Department of Agriculture – Food Safety and Inspection Service. Athens, USA.

Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. (2012): Handbook of Culture Media for Food and Water Microbiology, pp. 956-958. Royal Society of Chemistry, Cambridge, UK.

Donelly, C.W. and Baigent, G.K. (1986): Method for flow cytometric detection of *Listeria monocytogenes* from raw meat and poultry. Appl. Environ. Microbiol. **52**: 689-695.

Pusch, D. (1989): A review of current methods used in the United States for isolating *Listeria* from food. Int. J. Food Microbiol. **8**(3), 197-204.

Ordering Information

Product	Cat. No.	Pack size
EcoCult® UVM Listeria selective enrichment broth modified acc. USDA-FSIS	1.40183.5000	5 kg
EcoCult® UVM Listeria selective enrichment broth modified acc. USDA-FSIS	1.40183.9010	10 kg
GranuCult® UVM Broth modified acc. USDA-FSIS	1.10824.0500	500 g
GranuCult® UVM Broth modified acc. USDA-FSIS	1.10824.5000	5 kg