TECHNICAL DATA SHEET

LISTERIA ENRICHMENT BROTH (MODIFIED UVM I)

SELECTIVE ENRICHMENT FOR *LISTERIA*

1 INTENDED USE

The enrichment broths UVM (University of Vermont) involve a 2 step process, leading to a higher degree of isolation of *Listeria monocytogenes* in meat products (including poultry).
UVM 1 enrichment broth allows for primary enrichment of *Listeria*.

2 HISTORY

UVM media were described by Donnelly and Baigent in 1986, based on the Dominguez-Rodriguez *et al*. (1984) enrichment medium for *Listeria*.). The difference in acriflavin concentrations in UVM I and UVM II Broths, as well as the two-step enrichment procedure, lead to a very satisfactory recovery of *Listeria monocytogenes.*
In the modified formula currently used, the nalidixic acid content has been reduced from 40 to 20 mg/liter.

3 PRINCIPLES

Peptones, yeast extract and meat extract supply the essential nutrients for the growth of *Listeria*.

The sodium chloride concentration increases selectivity.

Phosphates buffer the pH of the medium.

Esculin is hydrolyzed to glucose and esculetin by *Listeria*.

Nalidixic acid blocks the DNA replication of bacteria sensitive to this antibacterial agent.

Accompanying Gram-positive microflora are inhibited by acriflavin.

4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media :

- Proteose peptone ..... 5,0 g
- Tryptone ..... 5,0 g
- Yeast extract ..... 5,0 g
- Bacteriological meat extract ..... 5,0 g
- Sodium chloride ..... 20,0 g
- Disodium phosphate, anhydrous ..... 9,6* g
- Monopotassium phosphate ..... 1,35 g
- Esculin ..... 1,0 g
- Nadixic acid ..... 20,0 mg
- Acriflavin (chlorhydrate) ..... 12,0 mg

pH du of the ready-to-use media at °C : 7,4 ± 0,2.

* 9.6 g of disodium phosphate anhydrous is equal to 12 g dibasic sodium phosphate.

5 PREPARATION

- Dissolve 52 g of dehydrated media (BK113) in 1 liter of distilled or demineralized water.
- Stir slowly until complete dissolution.
- Dispense in vials at 225 mL per vial.
- Sterilize in an autoclave at 115°C for 15 minutes.
- Cool to room temperature.

✓ **Reconstitution : 52 g/L**

✓ **Sterilization : 15 min at 115 °C**

6 INSTRUCTIONS FOR USE

- Aseptically add 25 g of the product to analyze to a tared flask containing 225 mL of media
- Mix well.
- Incubate at 30 ± 1 °C for 24 hours.

✓ **Inoculation : 25 g in 225 mL**

✓ **Incubation : 24 h at 30 °C**

7 RESULTS

Perform a secondary enrichment in UVM II broth or isolate on a selective media like **COMPASS® *Listeria* Agar** according to the reference in vigor.

8 QUALITY CONTROL

Dehydrated media : beige powder, free-flowing and homogeneous.
Prepared media : amber yellow solution, with a bluish reflection, limpid.

Typical culture response after 24 hours of incubation at 30 °C, followed by subculture on **COMPASS® *Listeria* Agar.**

Microorganisms		Growth
Listeria monocytogenes 4b + *Enterococcus faecalis* + *Escherichia coli*	WDCM 00021 WDCM 00087 WDCM 00013	> 10 characteristic colonies
Listeria monocytogenes ½ a + *Enterococcus faecalis* + *Escherichia coli*	WDCM 00109 WDCM 00087 WDCM 00013	> 10 characteristic colonies
Enterococcus faecalis *Escherichia coli*	WDCM 00087 WDCM 00013	< 100 colonies Inhibited, score 0

9 STORAGE / SHELF LIFE

Dehydrated media : 2-30 °C.
The expiration date is indicated on the label.

Prepared media in vials (*) : 30 days at 2-8 °C, shielded from light.
(*) Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

10 PACKAGING

Dehydrated media :
500 g bottle BK113HA

11 BIBLIOGRAPHY

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Donelly, C.W., and Baigent, G.J.. 1986. Method for flow cytometric detection of *Listeria monocytogenes* in milk. Applied and Environmental Microbiology, **52** : 689-695.

Lee, W.H., and MacClain, D.. 1986. Improved *Listeria monocytogenes* selective agar. Applied and Environmental Microbiology, **52** : 1215-1217.

MacClain, D., and Lee, W.H. 1988. Development of USDA-FSIS method for isolation of *Listeria monocytogenes* from raw meat and poultry. Journal of Association of Official Analytical Chemists, **71** : 660-664.

12 ADDITIONAL INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

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