

TECHNICAL DATA SHEET

LISTERIA ENRICHMENT BROTH (LEB ACC.TO FDA)

SELECTIVE ENRICHMENT OF *LISTERIA*

1 INTENDED USE

LEB media according to FDA (Food and Drug Administration) is used for the selective enrichment of *Listeria* in milk, dairy products, meats, poultry and other food products.

2 HISTORY

The medium was formulated by Lovett *et al.* in 1985 for the selective enrichment of *Listeria monocytogenes*, a contaminant of raw milk and pasteurized milk. Compared to prior techniques of enrichment by cold treatment, which were slower, the Lovett method resulted in an incubation at 30°C for not more than 48 hours, after which the culture was inoculated on the surface of a plate of MacBride Agar.

3 PRINCIPLES

Tryptone, papaic digest of soybean meal and yeast extract furnish the nutrients required for the growth of *Listeria*.

Sodium chloride provides osmotic balance.

Dipotassium phosphate buffers the pH of the medium.

Cycloheximide inhibits the development of contaminating saprophytic molds.

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 :

- Tryptone	17,0 g
- Papainic digest of Soybean Meal USP	3,0 g
- Yeast extract	6,0 g
- Glucose	2,5 g
- Dipotassium phosphate.....	2,5 g
- Sodium chloride	5,0 g
- Cycloheximide	50,0 mg
- Acriflavin (chlorhydrate)	15,0 mg
- Nalidixic acid	40,0 mg

pH of the ready-to-use media at 25 °C : 7,3 ± 0,2.

5 PREPARATION

- Dissolve 36,1 g of dehydrated media (BK112) in 1 liter 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 :**
36,1 g/L

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

6 INSTRUCTIONS FOR USE

- Aseptically add 25 g of the product to test into a vial of 225 mL of media.
- Mix well.
- Incubate at 30 ± 1 °C for 24 and 48 hours.

✓ **Inoculation :**
25 g in 225 mL
✓ **Incubation :**
24 h and 48 h at 30 °C

7 RESULTS

Isolate onto one of several different selective media (Oxford, PALCAM and/or **COMPASS® Listeria Agars**).

8 QUALITY CONTROL

Dehydrated media : beige powder, free-flowing and homogeneous.

Prepared media : yellow-amber solution, limpid.

Typical culture response after 24 hours of incubation at 30 °C, followed by re-isolation onto **COMPASS® Listeria Agar**

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

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 BK112HA

11 BIBLIOGRAPHY

Lovett, J., Francis, D.W., and Hunt, J.M.. 1987. *Listeria monocytogenes* in raw milk: detection, incidence and pathogenicity. Journal of Food Protection, **50** : 188-192.

Tiwari, N.P., and Aldenrath, S.G.. 1989. Isolation of *Listeria monocytogenes* from food products on 4 selective plating media. Journal of Food Protection, **53** : 382-385.

Bind, J.L.. 1991. Mise en évidence et dénombrement des *Listeria* à partir de produits laitiers. Le Lait, **71** : 99-105.

12 ADDITIONAL INFORMATION

COMPASS[®] is a registered trademark of SOLABIA S.A.S.

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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