

REVEAL® BUFFERED *LISTERIA* ENRICHMENT BROTH (BLEB) (9783) REVEAL BULK BUFFERED *LISTERIA* ENRICHMENT BROTH (9786)

Intended Use

Reveal Buffered *Listeria* Enrichment Broth is used in the Reveal *Listeria* Test System as a selective enrichment for *Listeria* species.

Product Summary and Explanation

Listeria monocytogenes, described first in 1926 by Murray, Webb, and Swann,¹ is an extensive problem in public health and food industries. This organism has the ability to cause human illness and death, particularly in immunocompromised individuals and pregnant women.² Epidemiological evidence from outbreaks of listeriosis has indicated that the principle route of transmission is via consumption of foods contaminated with *Listeria monocytogenes*, including meat, eggs, chicken and dairy products.^{3,4} Certain strains of *Listeria* spp. are able to survive the manufacturing and ripening processes in dairy products.

Reveal Buffered *Listeria* Enrichment Broth is a modification of the formula by Lovett et al.⁵ The enrichment properties were improved by increasing the buffering capacity of the medium with the addition of disodium phosphate.

Principles of the Procedure

Enzymatic Digest of Casein, Enzymatic Digest of Soybean Meal, and Yeast Extract provide nitrogen, vitamins, and minerals in Reveal Buffered *Listeria* Enrichment Broth. Dextrose is the carbohydrate source. Sodium Chloride maintains osmotic balance. Monopotassium Phosphate, Dipotassium Phosphate, and Disodium Phosphate are the buffering agents. Nalidixic Acid inhibits growth of Gram-negative organisms, and Acriflavin inhibits Gram-positive bacteria. Cyclohexamide is used to inhibit growth of saprophytic fungi.

Reveal Buffered *Listeria* Enrichment Broth is used as the secondary enrichment in the Reveal *Listeria* Test System to selectively enrich *Listeria* spp. present in food and environmental samples. Enrichment media are used to nurture any injured or stress cells, along with inhibiting normal flora or nuisance organisms. This 42 hour enrichment is optimal for flagellar expression and detection by the Reveal test device.

Formula / Liter

Enzymatic Digest of Casein	17 g
Enzymatic Digest of Soybean Meal	3 g
Yeast Extract.....	6 g
Dextrose.....	2.5 g
Sodium Chloride	5 g
Monopotassium Phosphate	1.35 g
Dipotassium Phosphate	2.5 g
Disodium Phosphate.....	9.6 g
Cycloheximide.....	0.05 g
Nalidixic Acid.....	0.04 g
Acriflavin	0.015 g
Final pH: 7.3 ± 0.2 at 25°C	

Precautions

1. For Laboratory Use.
2. TOXIC. Toxic if swallowed, inhaled, or absorbed through the skin. Cycloheximide may be fatal if swallowed. Possible risk of harm to unborn child. Irritating to eyes, skin, and respiratory system.

Directions

1. Re-hydrate one unitized bottle of Reveal Buffered *Listeria* Enrichment Broth (# 9783) by adding 10 mL of sterile water, **OR** dissolve 0.5 g of Reveal Buffered *Listeria* Enrichment Broth (# 9786) in 10 mL of sterile water preheated to 30°C. DO NOT AUTOCLAVE.
2. Cap the bottle tightly, and shake to dissolve the medium.

Note: Preparation directions are dependent upon the type of sample tested. Refer to the Reveal *Listeria* Test System package insert under the section Testing of Different Commodities for complete instructions.

Quality Control Specifications

Dehydrated

Appearance: Medium is pale yellow and free-flowing.

Bioburden: No growth after 48 hours.

Re-hydrated

Solubility: 0.5 ± 0.1 grams solubilizes in 10 mL of water within 5 minutes.

pH: pH of re-hydrated medium should be 7.3 ± 0.2

Performance: When used with Reveal Half Fraser Broth, provides detection of *Listeria* spp. ATCC 33090, ATCC 19111, ATCC 19112, and ATCC 19115 inoculated at ≤ 10 CFU, when package insert procedure is followed.

Test Procedure

Refer to the Reveal *Listeria* Test System package insert for complete details on the test procedure. To isolate *Listeria* spp. from milk, dairy products, and food samples refer to appropriate references.

Results

Refer to the Reveal *Listeria* Test System package insert under the section Interpretation of Results for a complete discussion of the test results.

Storage

Store sealed bottle containing the dehydrated medium at 15 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Identification of *Listeria monocytogenes* must be confirmed through biochemical and serological testing.
2. Use re-hydrated primary or secondary enrichment media within the same day as prepared.
3. DO NOT AUTOCLAVE.

Packaging

Reveal Buffered *Listeria* Enrich Broth (BLEB) Code No. 9783 20 unitized, pre-measured bottles

Reveal Bulk BLEB 9786 500 g for 1000 tests/samples

References

1. **Murray, E. G. D., R. A. Webb, and M. B. R. Swann.** 1926. A disease of rabbits characterized by large mononuclear leucocytosis caused by a hitherto undescribed bacillus *Bacterium monocytogenes*. J. Path. Bact. **29**:407-439.
2. **Monk, J. D., R. S. Clavero, L. R. Beuchat, M. P. Doyle, and R. E. Brackett.** 1994. Irradiation inactivation of *Listeria monocytogenes* and *Staphylococcus aureus* in low and high fat, frozen refrigerated ground beef. J. Food Prot. **57**:969-974.
3. **Bremer, P. J., and C. M. Osborne.** 1995. Thermal-death times of *Listeria monocytogenes* in green shell mussels prepared for hot smoking. J. Food Prot. **58**:604-608.
4. **Grau, F. H., and P. B. Vanderlinde.** 1992. Occurrence, numbers, and growth of *Listeria monocytogenes* on some vacuum-packaged processed meats. J. Food Prot. **55**:4-7.
5. **Lovette, J., D. W. Frances, and J. M. Hunt.** 1987. *Listeria monocytogenes* in raw milk: detection, incidence and pathogenicity. J. Food Prot. **50**:188-192.
6. **Vanderzant, C., and D. F. Splittstoesser (eds.).** 1992. Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.
7. **Marshall, R. T. (ed.).** Standard methods for the examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
8. **Hitchins, A. D.** 1998. Detection and enumeration of *Listeria monocytogenes* in foods. Bacteriological analytical manual, 8th ed. U.S. Food and Drug Administration, Washington, D.C.

Technical Information

Contact Neogen Corporation for Technical Service at (800)234-5333, (517)372-9200 or fax us at (517)372-2006.