Universal Preenrichment Broth (NCM0044)

Intended Use

Universal Pre-enrichment Broth is used for the recovery of *Salmonella* spp. and *Listeria* spp. in a laboratory setting. Universal Pre-enrichment Broth is not intended for use in the diagnosis of disease or other conditions in humans.

Description

Traditional methods for recovering *Salmonella* spp. and *Listeria* spp. from food products require separate pre-enrichment media for each microorganism. Some broth media recommended for preenrichment contain antibiotic inhibitors or have insufficient buffering capacity which hinder recovery of sublethally injured cells.

Bailey and Cox formulated Universal Preenrichment Broth to permit simultaneous resuscitation of sublethally injured *Salmonella* and *Listeria*. The broth medium provides sufficient buffering capacity to prevent rapid decreases in pH and allows for repair of injured cells that might be sensitive to low pH values or inhibitory substances.

Universal Pre-enrichment Broth is used as the preenrichment for *Salmonella* testing of orange & apple juice, cider, cantaloupes, tomatoes, and mamey pulp according to FDA/BAM Methods.

Typical Formulation

Enzymatic Digest of Casein	5.0 g/L
Proteose Peptone	5.0 g/L
Potassium Phosphate Monobasic	15.0 g/L
Sodium Phosphate Dibasic	7.0 g/L
Sodium Chloride	5.0 g/L
Dextrose	0.5 g/L
Magnesium Sulfate	0.25 g/L
Ferric Ammonium Citrate	0.1 g/L
Sodium Pyruvate	0.2 g/L

Final pH: 6.3 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution

Refer to SDS

Preparation

1. Dissolve 38 g of the medium in one liter of purified water.
2. Mix thoroughly
3. Autoclave at 121°C for 15 minutes.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is clear to moderately hazy and yellow to amber.

Expected Cultural Response: Cultural response in Universal Preenrichment Broth incubated aerobically at 35 ± 2°C and examined for growth after 18 - 24 hours.

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MICROORGANISM	APPROX. INOCULUM (CFU)	Growth
Listeria monocytogenes ATCC® 7644	10-100	Good
Listeria monocytogenes ATCC® 15313	10-100	Good
Salmonella cholerasuis ATCC® 13076	10-100	Good
Salmonella typhimurium ATCC® 14028	10-100	Good

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure
Substitute Universal Pre-enrichment Broth for preenrichment media as specified for *Salmonella* and *Listeria* and follow recommended procedures.

Results
Salmonella and *Listeria* demonstrate good growth and recovery following pre-enrichment in this broth.

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

Limitations of the Procedure
Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Storage
Store sealed bottle containing the dehydrated medium at 2 - 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.

References

1. Vanderzant, C., and D. F. Splittstoesser (eds.). Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.
2. www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalytical manualBAM/default.htm.
3. Bailey, J. S., and N. A. Cox. 1992. Universal preenrichment broth for the simultaneous detection of *Salmonella* and *Listeria* in foods. J. Food Protect 55:256-259.
4. Bailey, J. S., D. L. Fletcher, and N. A. Cox. 1990. Efficacy of enrichment media for recovery of heat-injured *Listeria monocytogenes*. J. Food Prot. 47:299-302.
5. Juven, B. J., N. A. Cox, J. S. Bailey, J. E. Thomson, O. W. Charles, and J. V. Shutze. 1984. Recovery of *Salmonella* from artificially contaminated poultry feed in non-selective and selective broth media. J. Food Prot. 47:299-302.

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