91366 Universal Pre-Enrichment Broth

Universal Pre-enrichment Broth is used for recovering sublethally injured Salmonella and Listeria from food products.

Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	5.0
Proteose peptone	5.0
Monopotassium phosphate	15.0
Disodium phosphate	7.0
Sodium chloride	5.0
Dextrose	0.50
Magnesium sulphate	0.250
Ferric ammonium citrate	0.10
Sodium pyruvate	0.20
Final pH 6.3 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.
Appearance: Faintly yellow to brown colored, homogeneous, free flowing powder.
Color and Clarity: Faintly yellow to slightly brown colored, clear to slightly turbid solution.

Directions:
Suspend 38.05 grams in 1000 ml distilled water. Heat if necessary, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Principle and Interpretation:
This is non-selecvtive media designed for the recovery of microbial cells, which are sublethal injured (stress induced) or have a metabolic damage. This medium is recommended to be used prior to isolation on selective media (1).Injury may result from food processing and handling methods, including thermal treatment, refrigeration, freezing, drying, irradiation and from exposure to preservatives or extreme conditions. Universal Pre-enrichment Broth, formulated by Bailey and Cox (2), contains beneficial growth and recovery substances and sufficiently buffering agents to support injured bacteria (3, 4).
Casein enzymatic hydrolysate and proteose peptone are rich source sof nitrogen, vitamins, amino acids and other essential growth nutrients. Dextrose serves as the fermentable carbohydrate while the phosphates buffer the
medium. Magnesium sulphate, sodium chloride and ferric ammonium citrate provide essential ions required for metabolism. Sodium pyruvate stimulates the metabolism of injured organisms.

Cultural characteristics after 18-24 hours at 35-37°C.

Organisms (ATCC)	Inoculum	Growth
Listeria monocytogenes (19118)	50-100	+++
Salmonella Enteridis (13076)	50-100	+++
Salmonella Typhimurium (14028)	50-100	+++

References:

1. F.P. Downes, K. Ito, (Ed.), Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C. (2001)
2. J.S. Bailey, N.A. Cox, J. Food Prot. 55:256-259 (1992)
3. J.S. Bailey, D.L. Fletcher, N.A. Cox, J. Food Prot., 53:473-477 (1990)
4. B.J. Juven, N.A. Cox, J.S. Bailey, J.E. Thomson, O.W. Charles, J.V. Shutze, J. Food Prot., 47: 299-302 (1984)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.