

EE Broth, Mossel

A liquid medium designed for the selective enrichment of *Enterobacteriaceae* in bacteriological examination of foods.

REF: BS.1/NZ01.100.0100	100 Gram	REF: BS.1/NZ01.250.0250	250 Gram
REF: BS.1/NZ01.500.0500	500 Gram		



PRINCIPLE AND INTERPERTATION :

The Enterobacteriaceae family includes various enteric pathogens, such as Salmonella and Shigella, which typically enter the food supply chain through water contaminated with fecal matter. While rigorous food processing protocols can eliminate the majority of these microorganisms, certain individuals may sustain sub-lethal injuries. This occurs when they are subjected to environmental stressors, such as fluctuations in pH, exposure to steam or heat, and other adverse conditions (1). Critical food safety monitoring relies on accurately identifying and quantifying injured bacterial cells following a recovery period. For this purpose, EE Broth, Mossel (2) is utilized as an enrichment medium for Enterobacteriaceae in food (2) and animal feed (3). The medium uses peptone and dextrose for essential nutrients, while purified Brilliant Green and Bile serve to inhibit competing Gram-positive bacteria. Notably, dextrose replaces lactose in this formulation to ensure the detection of lactose-negative or late-fermenting strains that standard tests often miss, with phosphates maintaining the necessary pH buffer. To ensure the recovery of cells damaged by acidity or dehydration, samples are first resuscitated in aerated Tryptone Soya Broth for 2 hours at 25°C—a procedure vital for the analysis of dried (4), animal (5), and semi-preserved foods (6). EE Broth is an enrichment broth and should be used in conjunction with Violet Red Bile Glucose Agar. Subcultures must be made onto lactose differential media such as MacConkey Agar, Deoxycholate Citrate Agar or Brilliant Green Agar for the detection of lactose negative or delayed lactose fermenters. This is used to inoculate MPN tubes prepared using EE Broth.

Item	Formula per liter of medium
Peptone	10.00 gm
Dextrose	5.00 gm
Disodium hydrogen phosphate	6.45 gm
potassium dihydrogen phosphate	2.00 gm
Bile salts	*6.5 gm
Brilliant green	0.0135 gm

MEDIACOMPOSITION

Final pH 7.2 ± 0.2

Formula adjusted, standardized to suit performance parameters.

* equivalent to 20.0g of dehydrated ox bile

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.

Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the EE Broth material safety data sheet.

STORAGE AND STABILITY

BioScien EE Broth Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use Product performance is best if used within stated expiry period.

PREPARATION

Suspend 29.96 grams in 1000 ml purified/distilled water. Dispense in tubes or flasks as desired. Stopper with cotton plugs or loose fitting caps. Heat in free flowing steam or boiling water for 30 minutes. Avoid overheating of the medium. **DO NOT AUTOCLAVE.**

Deterioration

The color of BioScien EE Broth Light yellow to greenish yellow homogeneous free flowing powder. prepared medium Emerald green coloured, clear solution.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri dishes
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organisms (ATCC)	Growth	Acid
<i>Escherichia coli</i> ATCC 25922	luxuriant	Positive reaction, yellow colour
<i>Pseudomonas aeruginosa</i> ATCC 9027	luxuriant	Negative reaction, no colour change
<i>Proteus mirabilis</i> ATCC 25933	luxuriant	Positive reaction, yellow colour
<i>Staphylococcus aureus</i> ATCC 25923	Inhibited	
<i>Salmonella Typhimurium</i> 14028		Positive reaction, yellow colour

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact **BioScien** technical support.

REFERENCE

1. Mossel D. A. A., and Harrewijn G. A., 1972, *Alimenta* II, 29-30.
2. Mossel D. A. A., Vissar M. and Cornellsen A. M. R., 1963, *J. Appl. Bacteriol.*, 26(3):444.
3. Van Schothorst M. et al, 1966, *Vet Med.*, 13(3):273.
4. Mossel D. A. A. and Ratto M. A., 1970, *Appl. Microbiol.*, 20:273.
5. Mossel D. A. A., Shennan J. L. and Clare V., 1973, *J. Sci. Fd. Agric.*, 24: 499.
6. Mossel D. A. A. and Ratto M. A., 1973, *J. Food Technol.*, 8: 97.
7. International Organization for Standardization (ISO), 1993, Draft ISO/DIS 7402.
8. Salfinger Y., and Tortorello M.L., 2015, *Compendium of Methods for the Microbiological Examination of Foods*, 5th Ed., American Public Health Association, Washington, D.C.
9. Isenberg, H.D. *Clinical Microbiology Procedures Handbook* 2nd Edition.
10. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) *Manual of Clinical Microbiology*, 11th Edition. Vol. 1.

SYMBOLS IN PRODUCT LABELLING

 For in-vitro diagnostic use	 Number of <n> test in the pack
 Batch Code/Lot number	 Caution
 Catalogue Number	 Do not use if package is damaged
 Temperature Limitation	 Consult Instruction for use
 Expiration Date	
 Manufactured by	