

Mossel EE Broth EP/USP

Cat. 1202

For the selective enrichment of Enterobacteriaceae, especially Salmonella and coliforms.

Practical information

Applications	Categories
Selective enrichment	Enterobacteria

Industry: Pharmaceutical/Veterinary / Food / Final product Quality Control

Regulations: USP / European Pharmacopoeia

Principles and uses

Mossel EE (Enterobacteriaceae Enrichment) Broth is as an enrichment broth, used to promote the growth of the Enterobacteriaceae group, microorganisms which contaminate foods. The European Pharmacopoeia, USP in paragraph 2.6.13: "Microbiological examination of non-sterile products: test for specified microorganisms" recommends this medium for the testing of bile-tolerant Gram-negative bacteria in products.

The enumeration of Enterobacteriaceae is of great importance when controlling the sanitary condition of food. Microorganisms can be injured in food processing, including exposure to low temperatures, sub marginal heat, drying, radiation, preservatives or sanitizers. Recovery depends on the adequate resuscitation of damaged cells. Escherichia coli, even though present in small numbers as a contaminant in foods, grows easily in this medium.

Pancreatic digest of gelatin provides nitrogen, vitamins, minerals and amino acids essential for growth. Glucose is the fermentable carbohydrate providing carbon and energy. Disodium phosphate and monopotassium phosphate act as a buffer system. Brilliant green and ox bile are selective agents, inhibiting Gram-positive microorganisms.

Formula in g/L

Brilliant green	0,015	Gelatin pancreatic digest	10
Glucose monohydrate	5	Potassium dihydrogen phosphate	2
Disodium hydrogen phosphate dihydrate	8	Dehydrated Ox Bile	20

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 45 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Heat at 100 °C for 30 minutes. Cool immediately. AVOID OVERHEATING. DO NOT AUTOCLAVE. Dispense into appropriate containers.

Instructions for use

For the test of specified microorganisms (Bile-tolerant Gram-negative bacteria) according to European Pharmacopoeia:

- Prepare the sample using a 1 in 10 dilution of not less than 1 g of the product in Trypticasein Soy Broth (TSB) (Cat. 1224) and incubate at 20-25 °C for 2-5 hours.
- For the absence test, use the dilution made previously corresponding to 1g of the product to inoculate in Mossel EE Broth and incubate at 30-35°C for 24-48 hours.
- Subculture on plates of Violet Red Bile Agar with Glucose (VRBG) (Cat. 1092) and incubate at 30-35°C for 18-24 hours. The product complies with the test if there is no growth of colonies.
- For the quantitative test, use the dilution made previously corresponding to 0,1, 0,01 and 0,001 g of the product to inoculate in Mossel EE Broth and incubate at 30-35°C for 24-48 hours.
- Subculture on plates of Violet Red Bile Agar with Glucose (VRBG) (Cat. 1092) and incubate at 30-35°C for 18-24 hours.
- Growth of colonies constitutes a positive result.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
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Microbiological test

According to European Pharmacopoeia: Escherichia coli ATCC 8739, Staphylococcus aureus ATCC 6538, Pseudomonas aeruginosa ATCC 9027:
Incubation conditions: (30-35 °C / 24-48 h).
Inoculation conditions: Productivity (<= 100 CFU) / Inhibitory (>= 100 CFU).

Rest of strains:

Incubation conditions: (35±2 °C / 18-48 h).

Microorganisms	Specification	Characteristic reaction
Escherichia coli ATCC 8739 + Enterococcus faecalis ATCC 19433	>= 10 colonies on VRBG	Pink to red colonies with or without precipitation halo
Enterococcus faecalis ATCC 29212	Total inhibition (0)	
Staphylococcus aureus ATCC 6538	Total inhibition (0)	
Escherichia coli ATCC 8739	Good growth, turbidity	
Pseudomonas aeruginosa ATCC 9027	Good growth, turbidity	

Storage

Temp. Min.:2 °C

Temp. Max.:25 °C

Bibliography

Mossel D.A.A., Visser M. and Cornelissen A.M.R.J App, Bact. 24:444. 1963.

Mossel D.A.A et al. J. BAct. 84:381. 1982

European Pharmacopoeia 9.0