M-EC Test Agar

M1095

M-EC Test Agar is used for testing *Escherichia coli* in water samples using membrane filter technique.

Composition**

Ingredients	Gms / Litre
Proteose peptone	5.000
Yeast extract	3.000
Lactose	10.000
Sodium chloride	7.500
Dipotassium phosphate	3.300
Monopotassium phosphate	1.000
Sodium lauryl sulphate	0.200
Sodium deoxycholate	0.100
Bromocresol purple	0.080
Bromphenol red	0.080
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 45.26 grams in 1000 ml distilled water. Heat to boiling with frequent agitation to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Cool to about 50°C. Mix and pour into sterile Petri plates.

Principle And Interpretation

Examination of water, foods, ingredients and raw materials, for the presence of indicator groups such as coliforms is one of the most common tests in a microbiology laboratory, partly because of the relative ease and speed with which these tests can be accomplished. Where it is claimed that drinking water has been processed for safety, the finding of such organism demonstrates a failure of the process. It is a valuable bacterial indicator for determining the extent of faecal contamination of recreational surface waters or drinking water (1). M-EC Test Agar is recommended for the detection, differentiation and enumeration of *Escherichia coli* and coliforms in water using membrane filter technique (2).

Proteose peptone and yeast extract provide necessary nutrients for the growth of coliforms. Lactose is the carbon source as well as fermentable carbohydrate in the medium. Sodium deoxycholate and sodium lauryl sulphate inhibit the growth of contaminating gram-positive microorganisms. Bromocresol purple and bromphenol red are the pH indicators.

Filter the sample through a membrane filter. Place the membrane on M-EC Test Agar and incubate at 35 ± 0.5°C for 2 hours to rejuvenate injured or stressed bacteria and then incubate at 44.5 ± 0.2°C for 22 hours. Transfer filter to a filter pad saturated with urea substrate (Urea 2.0 g + phenol red 10 mg + distilled water 100 ml, adjust the pH between 3 and 4 use within one week). After 15 minutes, count yellow or yellow brown colonies using a fluorescent lamp and magnifying lens. *E. coli* produces yellow or yellow brown colonies.

Quality Control

Appearance

Light yellow to green homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Purple coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.5 w/v aqueous solution at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
M1095: Cultural characteristics observed after an incubation at 35- 37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of Colony
Cultural Response			
Escherichia coli ATCC 25922	50-100	luxuriant	yellow
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	
Enterococcus faecalis ATCC 29212	>=10^3	inhibited	

Storage and Shelf Life
Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference
1. Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology, Vol. 34, Progress in Industrial Microbiology,1995, Elsevier, Amsterdam
2. Eaton A. D., Clesceri L. S. and Greenberg A W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.

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