

Technical Information

M-EC Test Agar

Product Code: DM 2095

Application: - M-EC Test Agar is recommended 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

Principle & 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 supply necessary nutrients for the growth of coliforms. Lactose acts as the carbon source as well as fermentable carbohydrate in the medium. Sodium deoxycholate and sodium lauryl sulphate enhance 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 $35 \pm 0.5^\circ\text{C}$ for 2 hours to rejuvenate injured or stressed bacteria and then incubate at $44.5 \pm 0.2^\circ\text{C}$ 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.

Methodology

Suspend 45.26 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat to boiling with frequent agitation to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Cool to about 50°C . Shake well before pour into sterile Petri

Quality Control

Appearance

Light yellow to green homogeneous free flowing powder



Dehydrated Culture Media
Bases / Media Supplements

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity

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 Range

7.10-7.50

Cultural Response

DM 2095: Cultural characteristics observed after an incubation at 35- 37°C for 18-24 hours.

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

Storage and Shelf Life

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

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

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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- User must ensure suitability of the product(s) in their application prior to use.
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