



HiCrome M-TEC Agar

M1571

HiCrome M-TEC Agar is recommended by the U.S. Environmental Protection Agency (USEPA) for detection of thermotolerant *Escherichia coli* in water by the membrane filtration 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
Chromogen	0.500
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 45.6 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and pour into sterile Petri plates.

Principle And Interpretation

HiCrome M-TEC Agar is a chromogenic media used for detection and enumeration of thermotolerant *E.coli* (TEC) in water by membrane filtration (1), developed by Dufour (2). The modified medium contains the chromogen, 5-bromo-6-chloro-3-indolyl-β-D-glucuronide that is cleaved by enzyme β-D-glucuronidase to yield glucuronic acid, produced by *E.coli* strains. This imparts a purple-magenta colour to the colonies of *E. coli* only.

Proteose peptone and yeast extract provides essential nutrients. Lactose is the fermentable carbohydrate. Sodium chloride maintains osmotic equilibrium. Monopotassium phosphate and dipotassium phosphate provide strong buffering system to control the pH in the presence of fermentative action. Sodium lauryl sulphate and sodium deoxycholate make the medium more selective by inhibiting gram positive bacteria.

Membrane filter through which water sample has been passed is aseptically placed on the medium. The plates are then incubated at $44.5 \pm 0.2^\circ\text{C}$ for 22 - 24 hours. Following incubation *E.coli* will form purple to magenta coloured colonies on the membrane filters.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity

Light amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.56% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

M1571: Cultural characteristics observed after an incubation at $44.5 \pm 0.2^\circ\text{C}$ for 22-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of Colony
<i>Escherichia coli</i> ATCC 25922	50-100	good to luxuriant	purple/magenta
<i>Enterococcus faecalis</i> ATCC 29212	$\geq 10^3$	inhibited	
<i>Proteus mirabilis</i> ATCC 25933	50-100	good	colourless-light brown
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	good	colourless-tan

Storage and Shelf Life

Store dehydrated powder and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

- 1.U.S. Environmental Protection Agency, 2002, Method 1603; Publication EPA-821-R-02-023.
- 2.Dufour,Strickland and Cabelli, 1981, Appl. Environ. Microbiol. 41: 1152.

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