

M1713

HiCrome[™] M-TEC Broth

Intended Use:

Recommended for differentiation and enumeration of thermotolerant E. coli from water by membrane filter technique.

Composition**

Ingredients	g / L
Proteose peptone	5.000
Yeast extract	3.000
Lactose	10.000
Sodium chloride	7.500
Dipotassium hydrogen phosphate	3.300
Potassium dihydrogen phosphate	1.000
Sodium lauryl sulphate (SLS)	0.200
Sodium deoxycholate	0.100
Chromogen	0.500
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.6 gram in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add desired quantity (2-5 ml of broth) on sterile absorbent cotton pad for saturation. The medium should be used within 24 hours after rehydration.

Principle And Interpretation

HiCromeTM M-TEC Broth is a chromogenic media used for detection and enumeration of thermotolerant *E.coli* (TEC) in water by membrane filtration. HiCromeTM M-TEC Broth is a modification of the M-TEC Agar developed by Dufour (1). 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 carbon and nitrogen substances, long chain amino acids, vitamins and essential nutrients. Lactose is the fermentable carbohydrate. Sodium chloride maintains osmotic equilibrium. Potassium dihydrogen phosphate and dipotassium hydrogen 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.

Saturate a sterile cotton absorbent pad with about 2 ml of HiCromeTM M-TEC Broth. Membrane filter through which water sample has been passed is aseptically placed on the saturated absorbent pad face upwards. This absorbent pad is then incubated at $44.5 \pm 0.2^{\circ}$ C for 22 - 24 hours. Following incubation *E.coli* will form purple to magenta coloured colonies on the membrane filters.

Type of specimen

Water samples

Specimen Collection and Handling

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (2). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

- 1. ß-glucuronidase is present in 97% of E.coli strains, however few E.coli may be negative.
- 2. Some species may showpoor growth due to nutritional variations.
- 3. Further biochemical and serological test are necessary for confirmation.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow Homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution in tubes

Reaction

Reaction of 3.06% w/v aqueous solution at 25°C. pH : 7.3±0.2

pН

7.10-7.50

Cultural Response

Cultural characteristics observed after an incubation at 44.3-44.7°C for 22-24 hours

Organism	Inoculum (CFU)	Growth	Colour of colony
Proteus mirabilis ATCC 25933	50-100	good	colourless-light brown
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good to luxuriant	purple, magenta
Klebsiella pneumoniae ATCC 13883 (00097*)	50-100	good	tan-light purple
Enterococcus faecalis ATCC 29212 (00087*)	>=10 ⁴	inhibited	-

Key: (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 15-25°C in a tightly closed container and the prepared medium at 2-8°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.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

Reference

1. Dufour, Strickland and Cabelli, 1981, Appl. Environ. Microbiol. 41: 1152.

2. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.

3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.

4. 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.

Revision : 03/ 2024

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMediaTM publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMediaTM Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.

HiMedia Laboratories Pvt. Ltd. Corporate Office : Plot No.C-40, Road No.21Y, MIDC, Wagle Industrial Area, Thane (W) - 400604, India. Customer care No.: 022-6147 1919 Email: techhelp@himedialabs.com Website: www.himedialabs.com