



## M-E.coli Medium

MF027/E\*/F<sup>▽</sup>

### Intended Use:

Recommended for detection and enumeration of total coliforms and *E. coli* based on chromogenic differentiation.

### Directions

The test sample should be filtered through a sterile membrane filter having pore size of 0.22 $\mu$  / 0.45 $\mu$ . Rehydrate the nutrient pad with 2.0-2.5 ml sterile distilled / purified water. After filtration, remove the membrane filter aseptically using sterile forceps. Place the membrane filter on rehydrated nutrient pad. Incubate the inoculated nutrient. Interpret the results qualitatively by observing the presence or absence of growth and quantitatively by counting the number of colonies on the surface of the membrane filter and calculating CFU/ml.

### Principle And Interpretation

DriFilter Membrane Nutrient Pad Medium is ready to use sterile culture media in the form of a 50 mm biological inert absorbent pads impregnated with Sabouraud Dextrose Medium, then dried and sterilized in 55 mm petri plate. They eliminate the need of laborious media preparation and autoclaving procedures. The nutrient pads are to be just rewetted with sterile distilled water and are ready to use. Use of nutrient pads allows larger sample volumes to be tested at a time. Interpretation of results is directly by counting the CFUs and also quantifies the microbial load present in the sample.

M-E.coli Medium is used for detection and differentiation of *Escherichia coli* and coliforms in water samples using membrane filter technique. It is based on Tryptone Bile Agar used for detection of *Escherichia coli* in foods (1) where recovery of *Escherichia coli* is faster, more reliable and accurate.

The water sample is filtered through membranes and then placed on pad saturated with M-E.coli Broth and incubated at 37°C in sealed Petri plates. The medium contains chromogenic mixture, which helps to detect glucuronidase activity of *Escherichia coli* (3). This specific enzyme differentiates *Escherichia coli* from other coliforms. *Escherichia coli* cells split the chromogenic mixture with the help of glucuronidase to give blue colouration to the colonies. Coliforms other than *Escherichia coli* turn red as they reduce TTC (2,3,5-triphenyl tetrazolium chloride). Thus, the resulting colour distinction allows simple interpretation of test without further confirmation. tryptone provides the essential growth nutrients to the organisms. Bile salts inhibit gram - positive organisms.

### 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.  $\beta$ -glucuronidase is present in 97% of *E.coli* strains, however few *E.coli* may be negative. 2. Some species may show poor growth due to nutritional variations.

### 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

Dry filter membrane pad of 50mm diameter

### Colour

Pale to yellow coloured nutrient pad

### Sterility test

Passes release criteria

### Cultural Response

Cultural characteristics observed after incubation at 35-37°C for 18-24 hours (48 hours if necessary)

Organism	Inoculum (CFU)	Growth	Colour of Colony
<i>Enterobacter aerogenes</i> ATCC 13048 (00175*)	50-100	luxuriant	Light pink
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	luxuriant	Bluish purple
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	$\geq 10^4$	inhibited	

Key : \*Corresponding WDCM numbers.

## Storage and Shelf Life

On receipt store between 2-8°C. Use before expiry date on the label.

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 (4,5).

## Reference

1. Anderson J. M. and Baird Parker A.C., (1975), J. Appl. Bact., 39:111.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.),2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
3. Hansen W. and Yourassawsky E., (1984), J. Clin. Microbiol. 20:1177.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
5. 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.

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### Note:

MF000 - Sterile pad packed individually in sterile Petri plate without Membrane Filter

MF000E\* - Sterile pad packed individually in sterile disposable plastic bag without Membrane Filter

MF000F<sup>▽</sup> - Sterile pad packed individually in sterile Petri plate with sterile Membrane Filter (0.45 mm).

### 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 HiMedia™ 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. HiMedia™ 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.