

M-FC Medium (Without Membrane Filter)

MF013

For detection and enumeration of faecal coliforms at higher temperature (44°C).

Composition**

Proprietary

Directions

The test sample should be filtered through a sterile membrane filter having pore size of 0.22 / 0.45µ. 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

Field of Application: Water (Standard TNV 75, 7835, 1999), food. 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 M-FC 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-FC Medium, designed by Geldreich et al (2) is used for the detection and enumeration of faecal coliforms using the membrane filter technique. This medium is based on the property of faecal coliforms to grow at 44-45°C (1). M-FC Medium is recommended by APHA (3) and by various other standards for detection of faecal coliforms (4-6). APHA recommends the membrane filtration procedure and delayed incubation for faecal coliforms. Proteose peptone, tryptose and yeast extract provide necessary nutrients for the growth of faecal coliforms. Lactose is the carbon source as well as fermentable carbohydrate in the medium. Bile salts inhibit the growth of contaminating gram-positive microorganisms. Aniline blue is a triphenyl methane dye which suppresses the growth of many gram positive microorganisms. Aniline blue along with rosolic acid forms the indicator system of the medium. Membrane filters, through which water sample is passed, are aseptically placed onto M-FC Medium plates. If total coliforms are to be estimated, incubation is carried out at 35-37°C whereas if faecal coliform count is to be estimated, incubation is done at 44-45°C. Coliforms will form blue colonies whereas non-coliforms will form gray coloured colonies on M-FC Medium.

Quality Control

Appearance

Dry filter membrane pad of 50mm diameter

Colour

Light purple - greyish coloured nutrient pad

Sterility test

Passes release criteria

Cultural response

Cultural characteristics observed after incubation at 35 - 37°C for 22 - 24 hours.

Organism	Growth	Colour of colony
<i>Escherichia coli</i> ATCC 25922	Luxuriant	Light blue
<i>Shigella flexneri</i> ATCC 12022	Luxuriant	Pinkish

<i>Enterococcus faecalis</i> ATCC 29212	Inhibited	
<i>S.serotype Typhimurium</i> ATCC14028	Luxuriant	Pinkish

Storage and Shelf Life

Store between 10-30°C. Use before expiry date on the label.

Reference

1. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.) Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone. 2. Geldreich E. E., Clark H. F., Huff E. E. and Bert M., 1965, J. Am. Water Works Assoc., 57:208. 3. Eaton A. D., Cluskeri L. S. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C. 4. Official Methods of Analysis of AOAC International, 2000, 17th Ed., AOAC International, Gaithersburg, Md. 5. U.S. Environmental Protection Agency, 1992, EPA-814B-92-2002, Office of Ground Water and Technical Support Division, USEPA, Cincinnati, Ohio. 6. Bordner R. H., Winter J. A. and Scarpino P. V. (Eds.), 1978, EPA-600/8-78-017, Environmental Monitoring and Support Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio.



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