



M7 Hr FC Agar

M635

M7 Hr FC Agar is recommended for examination of water and waste water.

Composition**

Ingredients	Gms / Litre
Biopeptone	5.000
Yeast extract	3.000
Lactose	10.000
D-Mannitol	5.000
Sodium chloride	7.500
Sodium lauryl sulphate	0.200
Sodium deoxycholate	0.100
Bromo cresol purple	0.350
Phenol red	0.300
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 46.45 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Mix well and pour into sterile Petri plates.

Principle And Interpretation

M7 Hr FC Agar is a modified method of Van Donsel et al (1) and Reasoner et al (2), which is recommended by APHA (3) for the examination of water and wastewater for the presence of faecal coliforms by the membrane filter technique. This medium has an advantage over other media to yield results in 7 hours that are generally comparable to those obtained by the standard coliform method. Thus this medium is accepted for assessment of the sanitary quality of water during emergencies involving water treatment plant failure or line breaks in a distribution network. It is reliable and has sensitivity levels equal to those of the standard tests routinely used.

Biopeptone and yeast extract provide nutritional requirement to a wide variety of organisms. Lactose and mannitol are energy sources and sodium chloride maintains osmotic equilibrium of the medium. Sodium lauryl sulphate and sodium deoxycholate help to restrict the gram-positive and gram-negative bacterial flora present in water. Bromocresol purple and phenol red help as indicators in the detection of organisms. This is a solid culture medium for the rapid detection of faecal coliforms by membrane filtration method.

After filtering a suitable or desired volume of water, the membrane is placed on the surface of plate and then incubated at 41.5°C for 7 hours. Faecal coliform form yellow colonies, indicating lactose fermentation.

MF technique has certain limitations, particularly when testing waters with high turbidity or non-coliform (background) bacteria. For such waters or when the membrane filter technique has not been used previously, it is desirable to carry out parallel tests with the multiple tube fermentation technique to determine applicability and comparability.

Quality Control

Appearance

Beige to purple homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Dark pinkish purple coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.64% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

M635: Cultural characteristics observed after an incubation at 41.5°C for 7-18 hours .

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	>=50%	yellow
<i>Staphylococcus aureus</i> ATCC 25923	>=10 ³	inhibited	0%	
<i>Enterococcus faecalis</i> ATCC 29212	>=10 ³	inhibited	0%	

Storage and Shelf Life

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

Reference

1. Van Donsel D. J., Twedt R. M. and Geldrich E. E., 1969, Bacteriol.Proc. Abs. No. G46; p. 25.
2. Reasoner, D.J., Blannon J. C. and Geldrich E. B., 1979, Appl. Environ. Microbiol., 38:229.
3. Eaton A. D., Clesceri L. S., Rice E. W. 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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