

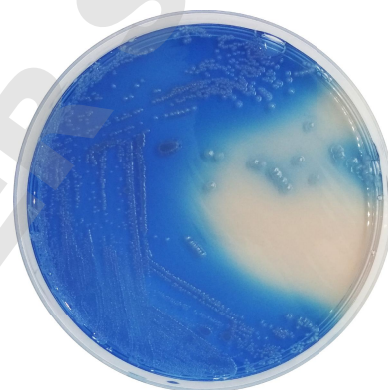
Fecal Coliforms Agar Base (m-FC)

For the cultivation and enumeration of fecal coliforms in water by the membrane-filtration technique at a high temperature.

Practical information

Applications	Categories
Selective enumeration	Coliforms

Industry: Water



Principles and uses

Fecal Coliforms Agar Base (m-FC) is prepared according to the formula proposed by Geldreich, Clark and Bert and it is used for the cultivation and enumeration of fecal coliforms microorganisms. This medium is suitable for the membrane filter technique at a high temperature. Many standard procedures specify the use of Fecal coliforms Media for testing water and foods.

Fecal coliforms are differentiated from other coliforms from environmental sources by their ability to grow at $44,5 \pm 0,5$ °C.

Proteose and Tryptose provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Lactose is the fermentable carbohydrate as a carbon and energy source. Bile salts and aniline blue inhibit growth of Gram-positive bacteria. Sodium chloride maintains the osmotic balance. Aniline blue and rosolic acid, which is provided by the supplement, are the differential indicators. Bacteriological agar is the solidifying agent.

Formula in g/L

Bacteriological agar	15	Bile salts	1,5
Lactose	12,5	Proteose peptone	5
Sodium chloride	5	Tryptose	10
Yeast extract	3	Aniline blue	0,1

Preparation

Suspend 52,1 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Cool to 45-50 °C and aseptically add 2 vials, each vial for 500 ml of the medium, of Fecal Coliforms Supplement (Cat. 6023). Homogenize gently and dispense into Petri dishes.

Instructions for use

Membrane filtration method:

- Place the membrane filter, which the sample has been filtered through, in the upper part of the Petri dish with the solidified agar.
- Incubate the plates for 24 ± 2 hours, one batch as control at 35 ± 2 °C, and the rest at $44,5 \pm 0,5$ °C.
- Observe the coliforms and count the colonies.

The differential indicator system (aniline blue and rosolic acid) gives a blue color to the colonies of fecal coliforms, while the rest of the microorganisms will become pinkish colored.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Gray-blue. With supplement: Red	7,4±0,2

Microbiological test

Incubation conditions: (35±2 °C and 44,5±0,5 °C / 24±2 h).

Microorganisms	Specification	Characteristic reaction
Shigella flexneri ATCC 12022	Good growth (35 °C), Inhibited growth (44,5 °C)	Pinkish colonies
Salmonella typhimurium ATCC 14028	Good growth (35 °C), Good growth (44,5 °C)	Pinkish colonies
Enterococcus faecalis ATCC 19433	Total inhibition	-
Escherichia coli ATCC 25922	Good growth (35 °C), Good growth (44,5 °C)	Blue colonies

Storage

Temp. Min.: 2 °C
Temp. Max.: 25 °C

Bibliography

Geldreich, Clark and Kabler, 1963. USPHS, HEW. Personal Communication.
Geldreich, Clark, Huff and Bert, 1965. Journal of American Water Works Association, 57:208..