

Fecal Coliforms Agar Base (m-FC)

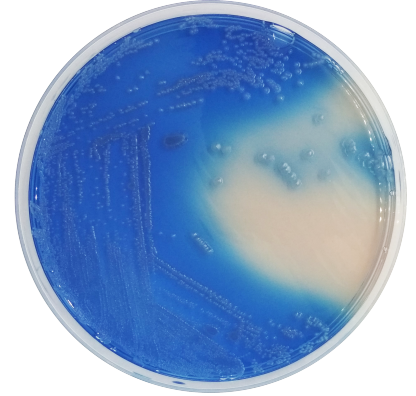
Cat. 1127

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..