

EC BROTH

For the detection of faecal coliform organisms in waters and foodstuff

Typical formula (g/l)

Tryptone	20.0
Lactose	5.0
Dipotassium Hydrogen Phosphate	4.0
Potassium Dihydrogen Phosphate	1.5
Sodium Chloride	5.0
Bile Salts n° 3	1.5

Directions

Suspend 37g in 1000 ml of cold distilled water, heat to dissolve, distribute into fermentation tubes and sterilise at 121°C for 15 minutes. Inoculate not more than 1ml of sample in 10ml of medium, or use multiple strength medium.

Final pH 6.9 ± 0.2

Description

EC Broth is prepared according to the formulation proposed by Hajna and Perry and reported by APHA, and ISO 7251.

EC Broth is a lactose buffered broth, with bile salts to obtain the inhibition of Gram-positive cocci and spore-forming organisms, which are often responsible for false positive results in Lactose Broth or Lauryl Sulphate Broth. The medium is recommended by APHA for the detection of faecal coliform organisms in waters and foodstuff, together with Faecal Coliform Broth, which can be mainly applied to treated waters and sea water; it is recommended by ISO 7251, for the enumeration of *E.coli* with MPN technique.

Technique

ISO 7251 recommends the following method for the enumeration of *E.coli* with MPN procedure:

1. Prepare the test sample and the decimal dilution in accordance with the specific Laboratory method using Maximum Recovery Diluent (Cat. N° 401691) or another suitable diluent.
2. Take three tubes of double-strength Lauryl Pepto Bios Broth and three tubes of single-strength Lauryl Pepto Bios Broth and by means of a sterile pipette transfer to each tube 10ml or 1ml respectively of the test sample, if liquid or 10ml or 1ml of the initial suspension in the case of other products.
3. Repeat the inoculation of the single strength and of the double strength liquid medium for each of the further decimal dilutions, using a fresh pipette for each dilution.
4. Incubate the tubes at 35- 37°C for 24 +/- 2 hours
5. From each of the incubated tubes showing gas production inoculate with a loop a tube of EC Broth and incubate at 45°C for 24 +/- 2 hours.
6. From each of the EC Broth tubes showing gas production inoculate with a loop a tube of Peptone-Tryptone Water and incubate at 45°C for 48 hours.
7. Carry on the indole test by adding 0.5 ml of Kovacs' Reagent
8. Express the results as the Most Probable Number of *E.coli* on the basis of gas production in the EC Broth and the positive result to indole test, in Peptone Water.

User quality assurance (44°C - 24 h)

Productivity control

E.coli ATCC 25922: growth, gas production

Selectivity control

P.aeruginosa ATCC 27853: partially inhibited

Storage

Dehydrated medium: 10-30°C

User prepared tubes: 1 month at 2-8°C

References

- APHA (1998) Standard Methods for the Examination of Water and Wastewater, 20th Ed.

- ISO 7251 Microbiology - General Guidance for enumeration of presumptive *E. coli* - Most Probable Number Technique. 2nd Ed. 1993 - 12 - 15
- Perry and Hajna (1943) Am. J. Pub. Hlth., **33**, 550.

Packaging

4014251	EC Broth,	100 g (2.7 l)
4014252	EC Broth,	500 g (13.5 l)