

44653 EC Broth (E.C. Broth)

For the selective detection of coliforms and *E. coli* in water, food and other material. This medium is recommended for use in Most Probable Number (MPN) procedure.

Composition:

| Ingredients | Grams/Litre |
|--------------------------------|-------------|
| Casein digest (pancreatic) | 20.0 |
| Lactose | 5.0 |
| Dipotassium phosphate | 4.0 |
| Potassium phosphate | 1.5 |
| Sodium chloride | 5.0 |
| Bile salts | 1.5 |
| Final pH 6.9 +/- 0.2 (at 25°C) | |

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions :

Dissolve 37 g in 1 litre distilled water and give 10 ml into each test-tubes containing inverted Durham tubes. Sterilize by autoclaving at 121°C for 15 minutes.

Gas production from lactose fermentation is indicated by using inverted Durham tubes. Inoculate the tubes containing 10 ml of EC Broth and the Durham tubes and incubate at the wished temperature for 24-48 hours. In case of gas formation the Durham tubes rise.

Principle and Interpretation:

Tryptose or Casein enzymic hydrolysate provides essential growth nutrients. Bile salts inhibit gram-positive bacteria especially bacilli and faecal Streptococci. Sodium Chloride maintains the osmotic balance of the medium. Potassium phosphates control the pH during fermentation of lactose. Lactose-positive bacteria metabolize lactose with gas formation, within 24 hour or less is a presumptive evidence of the presence of coliform bacteria. This medium can be used at 37°C for the detection of coliforms (no gas formation of *E. coli*) or at 45-50°C for the isolation of *Escherichia coli* and other coliforms (gas formation of *E. coli* and other coliforms).

Cultural characteristics after 24 hours at 44.5°C.

| Organisms (ATCC) | Growth | Gas formation |
|---------------------------------------|--------|---------------|
| <i>Escherichia coli</i> (25922) | +++ | + |
| <i>Klebsiella pneumoniae</i> (13883) | +++ | + |
| <i>Proteus mirabilis</i> (14153) | +++ | - |
| <i>Pseudomonas aeruginosa</i> (6633) | - | - |
| <i>Bacillus subtilis</i> (6633) | - | - |
| <i>Enterobacter aerogenes</i> (13048) | - | - |
| <i>Enterococcus faecalis</i> (29212) | - | - |

References:

1. L.J. Harris, M.E. Stiles, *E. coli* counts in vacuum-packed beef by the MPN technique, *J. Food Prot.* 55, 266 (1992)
2. Hajna and Perry, *Am. J. Publ. Health*, 33:550 (1943)
3. Tennant et al., *Can. J. Microbiol.*, 1:733 (1961)
4. Fishbein and Surkiewicz, *Appl. Microbiol.*, 12:127 (1964)
5. Vanderzant C. and Splittstoesser O. (Eds.), *Compendium of Methods for the Microbiological Examination of Foods*, 3rd ed., APHA, Washington, DC (1992)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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