



INTENDED USE

For the selective enumeration of faecal and non faecal coliforms in water

COMPOSITION

Ingredients	Gms/Ltr
Casein enzymatic hydrolysate	20.000
Lactose	5.000
Sodium chloride	5.000
Dipotassium phosphate	4.000
Monopotassium phosphate	1.500
Bile salt mixture	1.500

PRODUCT SUMMARY AND EXPLANATION

EC Broth is employed in elevated-temperature tests for distinguishing organisms of the total coliform group that also belong to the fecal coliform group. The fecal coliform test, using EC Medium, is applicable to investigations of drinking water, stream pollution, raw water sources, wastewater treatment systems, bathing waters, seawaters, and general water-quality monitoring. EC Medium is used in the MPN (Most Probable Number) test for fecal coliforms. The medium was originally described by Hajna and Perry. Fishbein and Surkiewicz used the EC confirmation test for recovery of *E. coli* from frozen foods and nut meats and reported that the test worked optimally when conducted at 45.5°C with incubation being limited to 24 hours. The procedure employing EC Medium provides information regarding the source of the coliform group (fecal or non-fecal) when used as a confirmatory test.

EC Broth is recommended by American public Health Association (APHA) and AOAC International for detection of water, wastewater and foods.

PRINCIPLE

Medium contains Casein enzymatic hydrolysate, provides amino acids and nitrogen for the growth. Bile salt mixture inhibit gram-positive bacteria especially bacilli and faecal *Streptococci* sp. Sodium chloride maintains the osmotic balance of the medium. Monopotassium phosphate and Dipotassium phosphate are the buffering agents and helps to control the pH during fermentation of lactose. Lactose- positive bacteria metabolize Lactose and produces gas, (as indicated by Durham tubes) within 24 hour or less is a presumptive evidence of the presence of coliform bacteria or indicating fecal coliforms. Inoculate the tubes containing 10 ml of EC Broth and the Durham tubes and incubate



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PRODUCT DATA SHEET

at wished temperature for 24 – 48 hours. In case of gas formation the Durham tubes rises up. This medium can be used at 37°C for the detection of coliforms (no gas formation of *E. coli*) or use at 45-50°C for the isolation of *Escherichia coli* and other coliforms (gas formation of *E. coli*).

INSTRUCTION FOR USE

1. Dissolve 37gms in 1000ml distilled water.
2. Gently heat to boiling with gentle swirling and dissolve the medium completely.
3. Dispense in test tubes containing inverted Durham tubes.
4. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
5. Cool the medium as quickly as possible for use.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder: Cream to yellow homogeneous free flowing powder

Appearance of prepared medium: Yellow colour, clear solution

pH (at 25°C): 6.9 ± 0.2

INTERPRETATION:

Cultural characteristics observed after incubation at 44.5°C for 24 - 48 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Gas production
<i>Escherichia coli</i>	25922	50-100	Luxuriant	Positive reaction
<i>Klebsiella pneumoniae</i>	13883	50-100	Luxuriant	Positive reaction
<i>Bacillus subtilis</i>	6633	≥ 1000	Inhibited	Negative reaction

STORAGE & STABILITY

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

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. American Public Health Association (1998) *Standard Methods for the Examination of Water and Wastewater*. 20th Edn. APHA Inc. Washington DC.

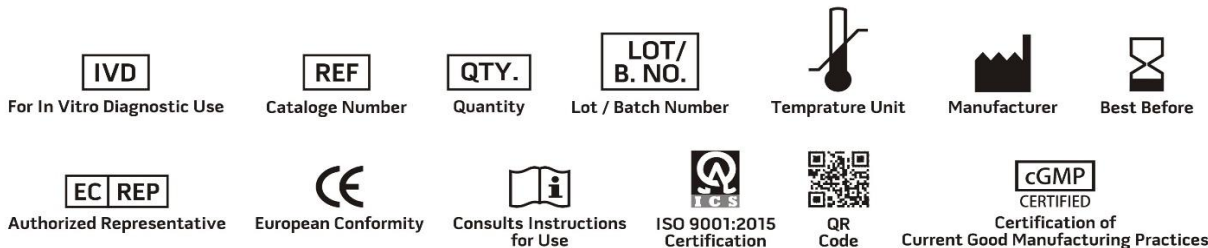
Manufacturer Address: A- 902A, RIICO Industrial Area, Phase III, Bhiwadi-301019.

Corp office Address: 903-909, 9th Floor, Bigjos Tower, Netaji Subhash Place, Delhi-110034.

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4. Hajna and Perry, Am. J. Publ. Health, 33:550. (1943).
5. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
6. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
7. Food and Drug Administration. 2000 Bacteriological Analysis Manual Online. AOAC International Gaithersburg, MD
8. Eaton AD., Cleaceri EW. Rice EW. And Greenberg AE. Standard Methods for the Examination of Water and Wastewater. 21st Ed. APHA, Washington DC



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.