EC MEDIUM

INTENDED USE

EC Medium is a culture medium for the detection of coliform bacteria at 35°C and of *Escherichia coli* at an elevated temperature (44.5 or 45.5°C).

SUMMARY AND EXPLANATION

EC Medium was devised by Hajna and Perry[1] and is used for the examination of water, milk, shellfish and other material for evidence of fecal pollution. Tennant et al. reported on the use of this medium for the estimation of *E. coli* densities in seawater and shellfish.[2] 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.[3]

EC Medium is recommended for use in the fecal coliform Most Probable Number (MPN) procedure for the examination of water, wastewater and foods.[4,5] The procedure employing EC Medium provides information regarding the source of the coliform group (fecal or nonfecal) when used as a confirmatory test.[6] It should not be used for the direct isolation of coliforms since prior enrichment in a presumptive medium for optimal recovery of fecal coliforms is required.

PRINCIPLE

EC Medium contains peptone as a source of nutrients. Lactose provides fermentable carbohydrate for the growth of coliforms. Bile salts are inhibitory for gram-positive bacteria, particularly bacilli and fecal streptococci. The medium has a strong potassium phosphate buffering system to control the pH in the presence of considerable fermentative action. Sodium chloride maintains the osmotic balance of the medium.

REAGENTS (FORMULA)

Tryptose	20.0	g
Lactose	5.0	g
Bile Salts No. 3	1.5	g
Dipotassium Phosphate	4.0	g
Monopotassium Phosphate	1.5	g
Sodium Chloride	5.0	g
Deionized Water	1000.0	ml

PROCEDURE

Refer to the various compendia for the specific procedures employing EC Medium.[4-6]

EXPECTED RESULTS

Refer to the compendia for the results expected when using this medium for the detection of coliforms and *E. coli*.[4-6]

QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

Organisms	Incubation	Results
Enterococcus faecalis ATCC 19433	44.5 ± 0.2°C for 24 ± 2 hours	Inhibited
Escherichia coli ATCC 25922	44.5 ± 0.2°C for 24 ± 2 hours	Growth with Gas Production
Escherichia coli ATCC 8739	44.5 ± 0.2°C for 24 ± 2 hours	Growth with Gas Production

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BIBLIOGRAPHY

1. Hajna and Perry. 1943. Am. J. Public Health *33*:550.

2. Tennant, Reid, Rockwell and Bynoe. 1961. Can. J. Microbiol. *1*:733.

3. Fishbein and Surkiewicz. 1964. Appl. Microbiol. *12*:127.

4. Eaton, Rice and Baird (ed.). 2005. Standard methods for the examination of water and wastewater, 21st ed., online. American Public Health Association, Washington, D.C.

5. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

6. Wehr and Frank (ed.). 2004. Standard methods for the examination of dairy product, online. American Public Health Association, Washington, D.C.

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