PRODUCT INFORMATION AND QUALITY CONTROL SHEET
EC MEDIUM

I. INTENDED USE
EC Medium is used for the detection of coliform bacteria at 35^{0}C and *Escherichia coli* at 44.5^{0}C.

II. SUMMARY AND EXPLANATION
EC Medium was developed by Hajna and Perry[1] in an effort to improve the methods for the detection of the coliform group and *E. coli*. This medium consists of a buffered lactose broth with the addition of 0.15% Bile Salts Mixture. Growth of spore-forming bacteria and fecal streptococci is inhibited by the bile salts, while growth of *E. coli* is enriched by its presence. This medium can be used at 35^{0}C for the detection of coliform organisms or at 44.5^{0}C for the isolation of *E. coli*.

EC Medium is employed in elevated-temperature tests for distinguishing organisms of the total coliform group that also belong to the fecal coliform gourp.[2] 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. Prior enrichment in presumptive media is required for optimum recovery of fecal coliforms when using EC Medium. EC Medium is used in methods for food and water testing.[2-4]

III. PRINCIPLES OF THE PROCEDURE
Enzymatic Digest of Casein provides nitrogen, vitamins, and amino acids in EC Medium. Lactose is the carbon source. Bile Salts Mixture is the selective agent against gram-positive bacteria, particularly bacilli and fecal streptococci. Dipotassium Phosphate and Monopotassium Phosphate are the buffering agents. Sodium Chloride is used to maintain the osmotic balance of the medium.

IV. TYPICAL FORMULA AND APPEARANCE
Appearance = Light amber, clear to very slightly opalescent.
(Approximate formula* per liter of processed water)

Enzymatic Digest of Casein	20 g
Lactose	5 g
Bile Salts Mixture	1.5g
Sodium Chloride	5 g
Monopotassium Phosphate	1.5 g
Dipotassium Phosphate	4 g

Final pH 6.8 ± 0.2 @ 25^{0}C
*adjusted and/or supplemented to meet performance criteria.

V. PRECAUTIONS
This product is for *IN VITRO* diagnostic use only. Culture specimens may contain microorganisms which can be potentially infectious to the user. Strict adherence to aseptic techniques and established precautions against microbiological hazards should be followed throughout the procedure. Carefully dispose of all items which contact patient specimens or isolated bacteria.

VI. STORAGE/SHELF LIFE
Media should be stored at 2-8^{0}C (36-46^{0}F). DO NOT FREEZE OR EXPOSE TO HIGH TEMPERATURES. Allow unopened tubes to warm to room temperature prior to inoculation. Prior to and during inoculation procedures, tubes should be handled in a manner that minimizes product exposure to the environment. Product that has exceeded the assigned expiration date noted on the label should not be used.

VII. SPECIMEN COLLECTION
The quality of culture results depends primarily on the adequacy and condition of the specimen submitted for examination.

VIII. MATERIALS PROVIDED
EC MediumTubes – 10/box

IX. MATERIALS REQUIRED BUT NOT PROVIDED
Incubator maintaining 35^{0}C and 44.5^{0}C.
Ancillary culture media

X. PROCEDURE
Refer to appropriate references for specific procedures using EC Medium.[2-4]

XI. EXPECTED RESULTS
NCCLS CONTROL ORGANISMS (ATCC STRAINS)

	35^{0}C		44.5^{0}C	
Microorganism	Response	Reaction (Gas)	Response	Reaction (Gas)
Enterobacter aerogenes (ATCC 13046)	good growth	pos or neg	poor growth	neg
Enterococcus faecalis (ATCC 29212)	inhibited	negative	inhibited	negative
Escherichia coli (ATCC 25922)	good growth	positive	fair growth	weak pos
Escherichia coli (ATCC 11775)	good growth	positive	good growth	weak pos

XII. LIMITATIONS
The ability to detect microorganisms by culture techniques can be affected by the following factors: improper specimen collection, storage and inoculation, improper culture incubation temperatures and atmospheres, improper length of culture incubation, and improper storage and handling of culture media.

XIII. REFERENCES
1. Hajna and Perry. 1943. Am J. Public Health. 33:550.
2. Eaton, A.D., L.S. Clescari, and A.E. Greenberg (eds.). 1995. Standard methods for the examination of water and wastewater. 19th ed. American Public Health Association, Washington, D.C.
3. Cunnif, P. (ed.). 1995. Official methods of analysis AOAC International, 16th ed. AOAC International, Gaithersburg, MD.
4. Vanderzant, C., and D.F. Splittstoesser (eds.). 1992. Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.

USER QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND INFORMATION

HealthLink recommends that the following quality assurance and quality control procedures be performed on each batch of product.

I. QUALITY ASSURANCE
The following quality assurance procedures must be performed to assure the product will perform according to its intended use within the assigned expiry date:
1. Daily, document that product storage refrigerator maintains temperature within the recommended range: 2-8^{0}C.
2. Daily, document that laboratory incubator maintains temperature within the recommended range: 35-37^{0}C.

II. QUALITY CONTROL
The following incoming inspection procedures must be performed for each batch (batch = same lot, same shipment) of culture media received in the laboratory:
Inspect tubes according to instructions contained in Section VI: STORAGE/SHELF LIFE.
Note: Notify Technical Service immediately if media does not meet the inspection criteria.

TECHNICAL SERVICE

HealthLink provides a toll free technical service line (1-800-638-2625) to assist with product usage. To have technical questions answered, please call between the hours of 9:00 am to 5:00 pm EST.

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