



MUG EC Broth, Modified

M1342

MUG EC Broth, Modified is recommended for the detection and enumeration of *Escherichia coli* in surface and waste water by miniaturized method (MPN).

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	40.000
Salicin	1.000
Triton X-100	1.000
MUG	0.100
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 42.1 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 12-15 minutes. Dispense as desired.

Principle And Interpretation

EC Broth was devised by Hajna and Perry (1) for the detection of *Escherichia coli* and coliforms. This was further modified by the addition of the fluorigenic compound MUG (2) for rapid detection of *E. coli*. MUG permits rapid detection of *E. coli* when medium is observed under UV light for fluorescence (2, 3). MUG also detects anaerogenic strains which may not be detected in conventional procedure (2). MUG is hydrolyzed by an enzyme β -glucuronidase possessed by *Escherichia coli* to yield a fluorescent end product 4-Methylumbelliferone.

Casein enzymic hydrolysate provides essential nutrients. Salicin act as energy sources and Triton X-100 acts as a surfactant. Following incubation, observe tubes for growth and fluorescence under long-wave (366nm) UV light. Positive reaction exhibits bluish fluorescence. Some strains of *Salmonella* and *Shigella* may also produce glucuronidase therefore these must be distinguished from *E. coli* on the basis of other parameters i.e. growth at 44°C and other biochemical tests.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution

Reaction

Reaction of 4.21% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH

6.70-7.10

Cultural Response

M1342: Cultural characteristics observed after an incubation at 44°C for 36 hours.

Organism	Inoculum (CFU)	Growth	Fluorescence under 366 nm
Cultural Response			
<i>Enterobacter aerogenes</i> ATCC 13048	$\geq 10^3$	luxuriant	negative
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	positive, blue
<i>Shigella flexneri</i> ATCC 12022	$\geq 10^3$	good	negative

Salmonella Typhi ATCC 6539 $\geq 10^3$ good negative

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. Hajna A. A. and Perry C. A., 1943, Am. J. Public Health 33 : 550.
2. Feng P. C. S and Hartman P. A. S., 1982, Appl. Environ Microbiol., 43:132.
3. Robinson J., 1984, Appl. Environ. Microbiol, 48: 285.

Revision : 1 / 2011



Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.