



MUG Lauryl Sulphate Broth

M1046

MUG Lauryl Sulphate Broth is recommended for detection of coliform organisms in water and food specimens by a fluorogenic procedure.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Lactose	5.000
Sodium chloride	5.000
Dipotassium phosphate	2.750
Monopotassium phosphate	2.750
Sodium lauryl sulphate	0.100
4-Methylumbelliferyl β -D-glucuronide (MUG)	0.050
Final pH (at 25°C)	6.8 \pm 0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35.65 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense into tubes with inverted Durhams tubes as required, taking into account the volume of sample to be tested. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Lauryl Sulphate Broth was formulated by Mallmann and Darby (1) and is recommended by APHA for the detection and enumeration of coliform organisms in foods, water and wastewater (2, 3). MUG is added in Lauryl Sulphate Broth as the fluorogenic compound which permits the rapid detection of *Escherichia coli* when observed under UV light where further confirmation is not required (2, 4). MUG detects anaerogenic strains which may not be detected in the conventional procedure. Feng and Hartman (5) used MUG-containing medium for studying β -glucuronidase activity and found *Escherichia coli* has 96-100% activity, *Salmonella* species with 17% and *Shigella* species 40% activity and other genera were negative. For weakly positive strains incubation should be carried out overnight. Robison (4) reported no false negative results and about 5% false positive results.

Casein enzymic hydrolysate provides nutrients while lactose act as energy source. Sodium lauryl sulphate inhibits many organisms other than coliforms. 4-methylumbelliferyl- β -D-glucuronide is hydrolyzed by an enzyme β -glucuronidase possessed by organisms to yield 4-methylumbelliferone, a fluorescent end product.

Inoculate 10 ml of the test specimen into three tubes each of single strength and double strength medium. Incubate the tubes at 35°C for 24 hours. Observe for opacity and gas formation. For confirmation of presumptive *E. coli*, observe for fluorescence and perform indole reaction using Kovacs Reagent (R008).

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution without any precipitate

Reaction

Reaction of 3.57% w/v aqueous solution at 25°C. pH : 6.8 \pm 0.2

pH

6.60-7.00

Cultural Response

M1046: Cultural characteristics observed after an incubation at 35-37°C for 4-24 hours.

Organism	Inoculum (CFU)	Growth	Fluorescence under uv at 366nm	Indole production
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	positive	positive reaction, red ring at the interface of the medium
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	negative	negative reaction

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. Mallmann and Darby, 1941, Am.J. Public Health, 31:127.
2. Downes F. P and Ito K. (Ed.), 2001 Compendium of Methods for the Microbiological Examination of Foods, 3rd ed., APHA, Washington, D.C.
3. Greenberg A. E., Trussell R. R. and Clesceri L. S. (Eds.), 1985, Standard Methods for the Examination of Water and Wastewater, 16th ed., APHA, Washington, D.C.
4. Robison, 1984, Appl.Environ.Microbiol., 48:285.
5. Feng P.C.S. and Hartman P. A., 1982, Appl. Environ. Microbiol., 43:1320.

Revision : 2 / 2015

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.