Technical Information

MUG Lauryl Sulphate MiVeg Broth, Modified

Product Code : VM2046

Application:- MUG Lauryl Sulphate MiVeg Broth, Modified is recommended for detection of coliform organisms in water and food specimens by a fluorogenic procedure.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	20.0
Lactose	5.0
Sodium chloride	5.0
Dipotassium phosphate	2.75
Monopotassium phosphate	2.75
Sodium lauryl sulphate	0.1
4-Methylumbelliferyl β-D-Glucuronide (MUG)	0.05
Final pH (at 25°C)	6.8±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MUG Lauryl Sulphate MiVeg Broth, Modified is prepared by using MiVeg hydrolysate in place of casein enzymic hydrolysate thereby making the medium free from BSE/TSE risks. This medium is the modification of MUG Lauryl Sulphate Broth. 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 incorporated in Lauryl Sulphate MiVeg Broth, like the conventional medium, 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 also detects anaerogenic strains which may not be detected in the conventional procedure. Feng and Hartman (5) studied β-glucuronidase activity by using MUG containing medium and found *Escherichia coli* has 96-100% activity, *Salmonella* species has 17% and *Shigella* species 40% activity and other genera were negative. For weakly positive strains incubation should be carried out overnight. This medium contains MiVeg hydrolysate which supplies nutrients. Lactose serves an energy source. Sodium lauryl sulphate inhibits many organisms other than coliforms. 4-methylumbelliferyl-β-D- glucuronide (MUG) is hydrolyzed by an enzyme β-glucuronidase possessed by *Escherichia coli* to yield 4-methylumbelliferone, a fluorescent end product.

Methodology

Suspend 35.65 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat if necessary to dissolve the medium completely. Dispense into tubes with inverted Durham's 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.

Quality Control

Physical Appearance

Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Light amber coloured, clear solution without anyprecipitate.

Reaction

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

pH range

6.6-7.0

Cultural Response/Characteristics

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

Organisms (ATCC)	Growth	Fluorescence
Enterobacter aerogenes(13048)	luxuriant	-
Escherichia coli (25922)	luxuriant	+

Key : + = fluorescence under UV light

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Mallmann and Darby, 1941, Am.J. Public Health, 31:127.
2. Speck M. (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
3. Eaton A.D., Clesceri L.S. and Greenberg A.E., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed, APHA, Washington, D.C.
4. Robinson, 1984, Appl.Environ.Microbiol., 48:285.
5. Feng P.C.S. and Hartman P. A., 1982, Appl. Environ.Microbiol., 43:1320.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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