Technical Information

MUG Violet Red MiVeg Agar

Product Code : VM2058

Application:- MUG Violet Red MiVeg Agar is a selective medium recommended for the detection and enumeration of coliform organisms by a fluorogenic procedure.

Composition

Ingredients	Gms / Litre
MiVeg peptone	7.0
Yeast extract	3.0
Synthetic detergent No. I	1.5
Lactose	10.0
Sodium chloride	5.0
Neutral red	0.03
Crystal violet	0.002
4-Methylumbelliferyl β-D-Glucuronide (MUG)	0.1
Agar	15.0
Final pH (at 25°C)	7.4±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MUG Violet Red MiVeg Agar is prepared by using MiVeg peptone and Synthetic detergent No. I instead ofPeptic digest of animal tissue and Bile salts mixture respectively thereby making the medium free from BSE/TSE risks. *Escherichia coli* is used as an indicator organism of unsanitary conditions. There are a number of selective media recommended for use in enrichment, presumptive identification and confirmatory procedures for demonstrating the presence of coliforms. Above mentioned procedures requires longer incubation period. Violet Red MiVeg Agar which is the modification of Violet Red Bile Agar is recommended by APHA (1, 2) for the detection and enumeration of coliforms in foods and dairy products. Incorporation of MUG to this medium permits the rapid detection of *Escherichia coli*, when the medium is observed for fluorescence under UV light, then it does not require any further confirmation (3).

This medium contains MiVeg peptone, yeast extract and lactose which supplies essential nutrients. Crystal violet and Synthetic detergent No. I present in the medium inhibits some gram-positive and gram-negative bacteria. Neutral red serves as a pH indicator and helps to exhibit redcolonies in the presence of acid from lactose fermentation. β-glucuronidase, an enzyme which is present in most of *Escherichia coli* and a few strains of *Salmonella, Shigella* and *Yersinia* hydrolyses the substrate MUG to yield , 4-methylumbelliferone a fluorescent end product. *Proteus vulgaris* if present in large numbers may suppress gas production by *Escherichia coli*.

Methodology

Suspend 41.63 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Boil for 1 minute. Cool the medium to 45 - 50°C and pour into sterile petri plates. DO NOT AUTOCLAVE.

Quality Control

Physical Appearance

Pinkish yellow coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Reddish purple, clear to slightly opalescent gel forms in petri plates.

Reaction

Reaction of 4.16 % w/v aqueous solution pH: 7.4 ±0.2 at 25°C

pH range

7.2-7.6

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 20-24 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Fluorescence
Enterobacter aerogenes (13048)	10^2-10^3	luxuriant	>50%	-
Escherichia coli (25922)	10^2-10^3	luxuriant	>50%	+

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. Speck M. (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
2. Standard Methods for the Examination of Dairy Products. 17th Edition, 2004 Edited by H. Michael Wehr and Joseph H.Frank.
3. Feng P.C.S. and Hartman P. A., 1982, Appl. Environ. Microbiol., 43:1320.
4. Robison, 1984, Appl. Environ. Microbiol., 48:285.

Disclaimer :

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