MUG Violet Red HiVeg™ Agar MV1058

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

Composition ** :

Ingredients	Grams/Litre
HiVeg 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.

Directions :

Suspend 41.63 grams in 1000 ml distilled water. 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.

Principle and Interpretation :

MUG Violet Red HiVeg Agar is prepared by using HiVeg peptone and Synthetic detergent No. I in place of Peptic digest of animal tissue and Bile salts mixture respectively to make the medium free from BSE/TSE risks. *Escherichia coli* is used as an indicator organism of unsanitary conditions. A number of selective media are recommended for use in enrichment, presumptive identification and confirmatory procedures for demonstrating the presence of coliforms. These procedures requires longer incubation period. Violet Red HiVeg 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. Addition of MUG to this medium permits the rapid detection of *Escherichia coli*, when the medium is observed for fluorescence under UV light, requiring no further confirmation (3).
HiVeg peptone, yeast extract and lactose provide essential nutrients. Crystal violet and Synthetic detergent No. I inhibit some gram-positive and gram-negative bacteria. Neutral red acts as a pH indicator and helps to exhibit red colonies in the presence of acid from lactose fermentation. The substrate, MUG is hydrolyzed by an enzyme β-glucuronidase, which is present in most of *Escherichia coli* and a few strains of *Salmonella, Shigella* and *Yersinia* to yield a fluorescent end product, 4-methylumbelliferone. *Proteus vulgaris* in large numbers may suppress gas production by *Escherichia coli*.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV1058 HiVeg peptone Synthetic detergent No. I	**M1058** Peptic digest of animal tissue Bile salts mixture

Recommended for	:	Detection and enumeration of coliform organisms by a fluorogenic procedure.
Reconstitution	:	41.63 g/l
Quantity on preparation (500g)	:	12.01 L
pH (25°C)	:	7.4 ± 0.2
Supplement	:	None
Sterilization	:	Boiling (DO NOT AUTOCLAVE).

Storage : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

Quality Control :

Appearance of powder
Pinkish yellow coloured, homogeneous, free flowing powder.
Gelling
Firm, comparable with 1.5% Agar gel.
Colour and Clarity
Reddish purple, clear to slightly opalescent gel forms in petri plates.
Reaction
Reaction of 4.16% w/v aqueous solution is pH 7.4 ± 0.2 at 25°C.
Cultural Response
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.

References :

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.

◉ Prepared from GMO free Vegetable proteins replacing Animal based peptones. Freedom from BSE/TSE worries.

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