



# Technical Data

## MUG Nutrient HiCynth™ Agar

MCD1461

MUG Nutrient HiCynth™ Agar is used for detection of *Escherichia coli* in water and food samples by a fluorogenic procedure.

### Composition\*\*

Ingredients	Gms / Litre
HiCynth™ Peptone No.1*	5.000
HiCynth™ Peptone No.5*	3.000
Sodium chloride	5.000
4-Methylumbelliferyl β-D-Glucuronide (MUG)	0.100
Agar	15.000
Final pH ( at 25°C)	7.4±0.2

\*\*Formula adjusted, standardized to suit performance parameters

\*Chemically defined peptones

### Directions

Suspend 28.1 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

*Escherichia coli* is the member of faecal coliform group, presence of which in water indicates faecal contamination. These bacteria possess the enzyme β-glucuronidase and are capable of cleaving the fluorogenic substrate 4-Methylumbelliferyl beta-D-Glucuronide (MUG) with the release of the corresponding fluorogen, 4-Methylumbelliferone (1). Therefore incorporation of MUG and subsequent fluorescence is confirmatory for presence of *E.coli* with no further confirmation required (2). MUG Nutrient Agar is recommended for detection of *E.coli* in water and food samples by a fluorogenic method. Presumptive *E.coli* in the samples can be directly inoculated into the medium. MUG Nutrient HiCynth™ Agar is prepared by completely replacing animal peptones or vegetable peptones with chemically defined peptones to avoid BSE/TSE risks associated with animal peptones.

HiCynth™ Peptone No.1 and HiCynth™ Peptone No.5 provide nitrogenous compounds, carbanaceous compounds, long chain amino acids, vitamin B complex and other growth nutrients. MUG is cleaved by the enzyme beta-glucuronidase of *E.coli* to release 4-methylumbelliferone which produces visible green-blue fluorescence under long wave UV light (1). Some strains of *Salmonella* and *Shigella* species also produce glucuronidase (3).

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel forms in Petri plates

#### Reaction

Reaction of 2.81% w/v aqueous solution at 25°C. pH : 7.4±0.2

#### pH

7.20-7.60

#### Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

#### Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Fluorescence (under UV)
----------	----------------	--------	----------	-------------------------

Please refer disclaimer Overleaf.

				light at 366 nm)
<b>Cultural Response</b>				
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	>=70%	positive
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good-luxuriant	>=70%	negative
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant	>=70%	negative
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	good-luxuriant	>=70%	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. Eaton A. D., Clesceri L. S. and Greenberg A. E. (ed.), 1995, Standard Methods for the Examination of Water and Wastewater, 19th Ed., American Public Health Association, Washington, D.C.
2. Feng J. S. and Hartman P. A., 1982, Appl. Environ. Microbiol., 43:1320
3. McFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol. I, Williams and Wilkins, Baltimore.

Revision : 00 / 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.