TM 1030 - MUG NUTRIENT AGAR

INTENDED USE

For detection of *Escherichia coli* in water and food samples by a fluorogenic method.

PRODUCT SUMMARY AND EXPLANATION

Escherichia coli is the member of faecal coliform group, presence of which in water indicates faecal contamination. These bacteria possess the enzyme b-glucuronidase and are capable of cleaving the fluorogenic substrate 4-Methylumbelliferyl beta- D-Glucuronide (MUG) with the release of the corresponding fluorogen, 4-Methylumbelliferone. Therefore, incorporation of MUG and subsequent fluoroscense is confirmatory for presence of *E. coli* with no further confirmation required. 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.

COMPOSITION

Ingredients	Gms / Ltr
Peptic digest of animal tissue	5.000
Sodium chloride	5.000
Beef extract	1.500
Yeast extract	1.500
4-Methylumbelliferyl ß-D-Glucuronide (MUG)	0.100
Agar	15.000

PRINCIPLE

Peptic digest of animal tissue, beef extract and yeast extract provide nitrogenous compounds and vitamin B complex. 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. Some strains of *Salmonella* and *Shigella* species also produce glucuronidase. Refer appropriate references for standard procedures.

INSTRUCTION FOR USE

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

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Light amber coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 7.4±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

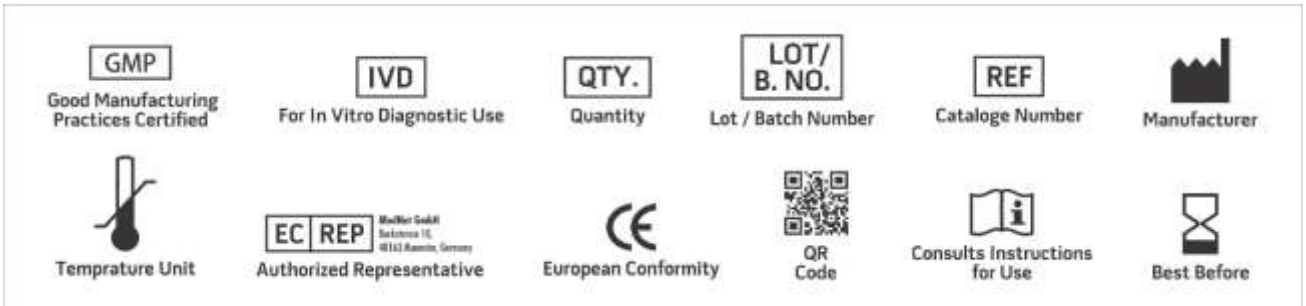
Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Fluorescence (under UV light at 366 nm)	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Good-luxuriant	>=50 %	Positive	35-37°C	18-24 Hours
Pseudomonas aeruginosa	27853	50-100	Good-luxuriant	>=50 %	Negative	35-37°C	18-24 Hours
Staphylococcus aureus	25923	50-100	Good-luxuriant	>=50 %	Negative	35-37°C	18-24 Hours
Streptococcus pyogenes	19615	50-100	Good-luxuriant	>=50 %	Negative	35-37°C	18-24 Hours

PACKAGING:
In pack size of 500 gm bottles.

STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 2-8°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL
After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES
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.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019