MUG NUTRIENT AGAR TM 1030

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

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

* Dehydrated powder, store in a dry place, in tightly-sealed containers at 24°C and protect from direct Sunlight.

Instructions for Use

Dissolve 28.10 gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.

Appearance: Light amber coloured clear to slightly opalescent
PH (at 25°C): 7.4 ± 0.2

Principle

MUG NUTRIENT AGAR is used for detection of *Escherichia coli* in water and food samples by a fluorogenic method. *Escherichia coli* is considered a faecal contaminant that 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*.

Beef extract, yeast extract and peptic digest of animal tissue provide vitamin B complex and nitrogenous compounds. 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.

Interpretation

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

Microorganisms	ATCC	Inoculum (CFU)	Growth	Fluorescence (under UV light at 366 nm)

Escherichia coli	25922	10^3	Good-luxuriant	Positive
Pseudomonas aeruginosa	27853	10^3	Good-luxuriant	Negative
Staphylococcus aureus	25923	10^3	Good-luxuriant	Negative
Streptococcus pyogenes	19615	10^3	Good-luxuriant	Negative

References

1. Feng J. S. and Hartman P. A., 1982, Appl. Environ. Microbiol., 43:1320.
2. McFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol. I, Williams and Wilkins, Baltimore.
3. 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.