MUG Tryptone Water

M1190

MUG Tryptone Water is used for detection of indole producing microorganisms by fluorogenic method.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Sodium chloride	5.000
4-Methylumbelliferyl ß-D-Glucuronide (MUG)	0.050
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 15.05 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense into tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Escherichia coli is a member of the faecal coliform group of bacteria, its presence is indicative of faecal contamination. The traditional IMViC tests are useful for coliform differentiation. The ability of certain microorganisms to breakdown tryptophan with the formation of indole is an important property for identification of bacteria (1, 2). MUG is also added to detect indole producing microorganisms (3) by fluorogenic method.

MUG Tryptone Water is used for detection of indole producing organisms by fluorogenic method. Organisms like *Escherichia coli* not only degrade tryptophan and produce indole but also possess the enzyme b-glucuronidase, which cleaves MUG to release 4-methylumbelliferone, which produces blue-green fluorescence under long wave UV light. Test tubes used should be checked under UV light to ensure the glass does not fluoresce.

Casein enzymic hydrolysate serves as a source of essential nutrients and also serves as a source of tryptophan, the substrate for indole reaction. Sodium chloride maintains the osmotic equilibrium of the medium while MUG is the fluorogenic substrate.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light yellow coloured clear solution without any precipitate

Reaction
Reaction of 1.50% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH
7.30-7.70

Cultural Response
M1190: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Fluorescence (under uv)
Cultural Response			
Escherichia coli ATCC 25922	50-100	luxuriant	positive
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	negative
Klebsiella pneumoniae ATCC 13883	50-100	luxuriant	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. American Public Health Association, 1980, Standard Methods for the Examination of Water and Wastewater, 15th Ed., APHA, Inc., Washington, D.C.
2. Farmer J. J., Davis B. R., Hickman- Brenner F. W., McWhorter A., Huntley- Carter G. P., Asbury M. A., Riddle C., Wathen-hrady H. G., Elias C. and Fanning G. R., 1985, J. Clin. Microbiol., 21:46.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore

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