TM 1368 – ECD MUG AGAR (ISO 21528-2017)

INTENDED USE

For confirmatory presence of *Escherichia coli* by fluorescence in UV and positive indole test while inhibiting accompanying intestinal flora.

PRODUCT SUMMARY AND EXPLANATION

EC Medium developed by Hajna and Perry to improve the methods for the detection of coliforms and *Escherichia coli*. Feng and Hartman developed a rapid assay for *E. coli* by incorporating 4-methylumbilliferyl-ß-gluconide (MUG) in to Lauryl Trytose Broth. E.C Medium with MUG is prepared according to the formula specified by the U.S Environmental Protection Agency and Standard methods for water and food testing.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	20.000
Lactose	5.000
Sodium chloride	5.000
Bile salts mixture	1.500
Dipotassium hydrogen phosphate	4.000
Potassium dihydrogen phosphate	1.500
Tryptophan	1.000
4-Methylumbelliferyl ß-D-Glucuronide (MUG)	0.070
Agar	15.000

PRINCIPLE

The medium consists of Tryptone provides the nitrogen, vitamins and amino acids in EC medium with MUG. Lactose is the carbon source in this medium. Bile salts mixture is the selective agent against gram-positive bacteria, particularly bacilli and fecal streptococci. Dipotassium phosphate and mono potassium phosphate are buffering agents. Sodium chloride maintains the osmotic balance of the medium. *E.coli* produces the enzyme glucoronidase that hydrolysis MUG to yield a fluorogenic product that is detectable under long wave (366 nm) UV light. Tryptophan serves as the substrate for indole reaction. The water sample is filtered through filter membranes, which are then placed on ECD MUG Agar and incubated overnight. After incubation observe for the presence of fluorescence under UV light. Lay a drop of Kovacs Indole reagent on the colonies. Indole positive colonies form a red zone around the colony. MUG positive and indole positive colonies are enumerated as *E. coli*.

INSTRUCTION FOR USE

- Dissolve 53.07 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- 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 : Yellow coloured, clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 7.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Indole production	Fluorescence (under 366nm)	Incubation temperature	Incubation Period
Klebsiella aerogenes	13048	50-100	Good-luxuriant	>=50%	Negative reaction	Negative	35-37°C	48-72 Hours
Staphylococcus aureus	25923	>=10^3	Inhibited	0%	-	-	35-37°C	48-72 Hours
Escherichia coli	25922	50-100	Good-luxuriant	>=50%	Positive reaction, red zone around the colony	Positive	35-37°C	48-72 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. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed.,Washington D.C.
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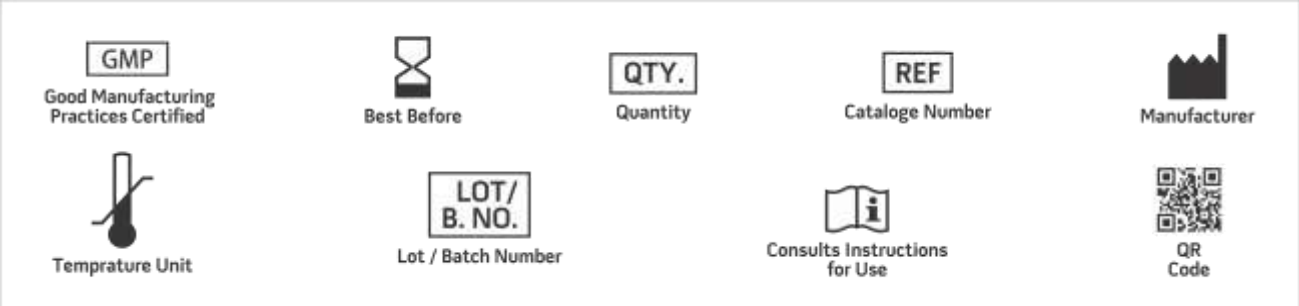
4. Federal Register 1991. National primary drinking water regulation analytical techniques, coliform bacteria. Fed Register. 56:636.
5. Hajna and Perry 1943. Am J Public Health 33:550.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
8. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.



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

***For Lab Use Only**

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