EC MEDIUM WITH MUG

CAT Nº: 1285

For quick detection of *Escherichia coli* in water, food ,milk and other appliactions.

FORMULA IN g/l

Tryptone	20.00	Monopotassium Phosphate	1.50
Lactose	5.00	Sodium Chloride	5.00
Bile salts Nº3	1.90	MUG (4-methylumbelliferyl-β-D-glucuronide)	0.10
Disodium Phosphate	4.00		

Final pH 6.9 ± 0.2 at 25ºC

PREPARATION

Suspend 37.5 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Do not sterilize in autoclave. Dispense into appropriate containers with Durham bells to test the lactose fermentation. The prepared medium should be store at 2-8°C. The color of the prepared medium is clear amber. This medium can be prepared at double concentration if the quantity for inoculation is 10 ml.

The dehydrated medium should be homogeneous, free-flowing and clear beige in color. If there are any physical changes, discard the medium.

USES

EC MEDIUM WITH MUG has the same formula as EC Medium with the addition of 4 methylumbelliferyl- B-D-glucuronide (MUG) recommended for the membrane-filter technique for detection of *E.coli*.

Water pollution caused by faecal contamination is a serious problem due to the potential for contracting diseases from pathogens (disease causing organisms).

This medium improves the detection methods of the coliform group, in particular of *E.coli,* and is used to investigate drinking water, wastewater treatment systems and generally for water-quality monitoring, as well as shellfish and other foods. The medium can be used at 35 ± 2°C for detection of coliform organisms or at 44.5°C for isolation of *E. coli.*

The Bile salts act as selective agent inhibiting Gram-positive bacteria, bacilli and enterococci but allowing *E. coli* to develop. The Potassium salts have a high buffering capacity. Tryptose provides the nutrients for growth and Lactose is the fermentable carbohydrate as carbon and energy source. Sodium chloride maintains the osmotic balance.

E.coli produces enzyme β-D-glucuronidase that hydrolyzes MUG to yield a fluorogenic product that is detectable under long-wave (366 nm) UV light. The addition of MUG to EC Medium provides another criterion, in addition to growth response and gas production, to determine the presence of *E. coli* in food and environmental samples.

MICROBIOLOGICAL TEST

The following results were obtained from standard strains, after incubation at a temperature of 37ºC±2ºC and observed after 24-48 hours under UV light.

Microorganisms	Growth	Fluorescence
Escherichia coli ATCC 25922	Good	+
Citrobacter freundii ATCC 43864	Good	-
Enterococcus faecalis ATCC 19433	Partially inhibited	-

BIBLIOGRAPHY

Hajna and Perry 1944 A.P.H.A.
APHA (1985) Standard Methods for Examination of Water and Wastewater, 16th Ed., pp 878-882
APHA (1985) Compendium of Methods for the Microbiological Examination of Foods, 2nd Ed
ISO 7251 Microbiology- General Guidance for enumeration of presumptive E. coli- Most Probable Number Technique. 2nd Ed. 1993-12-15.

STORAGE

Once opened keep powdered medium closed to avoid hydration.