

E.C. BROTH MUG

Selective broth for fecal coliforms and *E. coli* detection in water, wastewater, shellfish and foods.

TYPICAL FORMULA	(g/l)
Tryptone	20.0
Lactose	5.0
Bile Salts No. 3	1.5
Sodium Chloride	5.0
Potassium Phospahte Dibasic	4.0
Potassium Phospahte Monobasic	1.5
4-methylumbell- β -D-glucuronide (MUG)	0.05
L-Tryptophan	1.0
Final pH 6.9 \pm 0.2	

DESCRIPTION

E.C. BROTH MUG is a selective broth for fecal coliforms and *Escherichia coli* detection in water, wastewater, shellfish and foods.

PRINCIPLE

Tryptone provides aminoacids and proteins. Lactose is the carbon source in this medium. Bile Salts No. 3 is the selective agent against gram positive bacteria, particularly bacilli and fecal streptococci. Dipotassium phosphate and monopotassium phosphate are buffering agents. Sodium chloride maintains the osmotic balance of the medium. L-tryptophan is an aminoacid useful for the optimisation of direct indole test. *Escherichia coli* produces the enzyme glucuronidase that hydrolyzes MUG to yield a fluorogenic product that is detectable under long-wave (366 nm) UV light.

PREPARATION

Suspend 38.0 g of powder in 1 liter of distilled or deionized water. Heat until completely dissolved. Dispense into sterile final tubes endowed with Durham vials. Sterilize in autoclave at 121°C for 15 minutes.

TECHNIQUE

Inoculate tubes in duplicate with fresh 18-24 hours cultures. Incubate the first set at 35 \pm 2°C for 24 \pm 2 hours and the second set at 44.5°C for 24 \pm 2 hours. Read fluorescence under a long-wave UV light.

INTERPRETATION OF RESULTS

Following incubation, observe tubes for growth, production of gas and fluorescence. Positive gas production is demonstrated by displacement of the medium from the fermentation vial. Positive MUG reactions exhibit a bluish fluorescence under long-wave (approximately 366 nm) UV light. Typical strains of *E. coli* are positive for both gas production and fluorescence. Non-*E. coli* coliforms that grow may exhibit fluorescence but will not produce gas. Strains of *Salmonella*, *Shigella* and *Yersinia* that produce glucuronidase may be encountered. These strains must be distinguished from *E. coli* on the basis of other parameters; i.e., gas production, growth at 44.5°C.

STORAGE

The powder is very hygroscopic, store the powder at 10-30°C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident. Store prepared plates at 2-8°C away from light.

WARNING AND PRECAUTIONS

The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous. It is nevertheless recommended to consult the safety data sheet for its correct use. The product must be used only by properly trained operators.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES

1. Hajna and Perry. 1943. Am. J. Public Health 33:550.
2. Feng and Hartman. 1982. Appl. Environ. Microbiol. 43:1320.
3. Robison. 1984. App. Environ. Microbiol. 48:285.



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PRODUCT SPECIFICATIONS

NAME

E.C. BROTH MUG

PRESENTATION

Dehydrated medium

STORAGE

10-30°C

PACKAGE

Ref.	Content	Packaging
610332	500 g	500 g of powder in plastic bottle

pH OF THE MEDIUM

6.9 ± 0.2

USE

E.C. BROTH MUG is a selective broth for fecal coliforms and *Escherichia coli* detection in water, wastewater, shellfish and foods

TECHNIQUE

Refer to technical sheet of the product

APPEARANCE OF THE MEDIUM

Dehydrated medium

Appearance: free-flowing, homogeneous

Colour: light beige

Prepared medium

Appearance: clear

Colour: light amber

SHELF LIFE










4 years

QUALITY CONTROL

- Control of general characteristics, label and print
- Microbiological control
Inoculum for productivity: 10-100 CFU/ml
Inoculum for selectivity: 10⁴-10⁵ CFU/ml
Inoculum for specificity: ≤10⁴ CFU/ml
Incubation conditions: 18-24 h at 36 ± 1°C

Microorganism	ATCC	Growth	Gas	Fluorescence
<i>Escherichia coli</i>	25922	Good	+	+
<i>Klebsiella pneumoniae</i>	13883	Good	+	-
<i>Pseudomonas aeruginosa</i>	27853	Good	+	-

TABLE OF SYMBOLS

 Batch code	 Keep away from heat sources	 Manufacturer	 Use by	 Fragile, handle with care
 Catalogue number	 Temperature limitation	 Contains sufficient for <n> tests	 Consult instruction for use	



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