

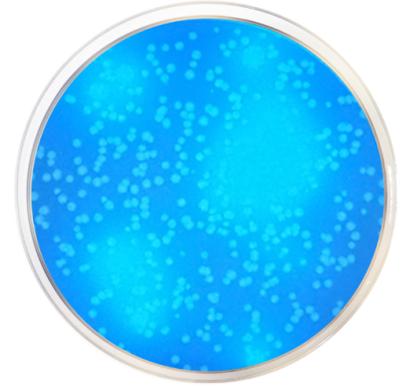
## EC with MUG Fluorogenic Agar

Cat. 1180

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

### Practical information

Applications	Categories
Detection	<i>Escherichia coli</i>
Industry: Water / Food	



### Principles and uses

EC with MUG Fluorogenic Agar is the same formula as EC Medium with the addition of 4 methylumbelliferyl- $\beta$ -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  $35\pm 2$  °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. Bacteriological Agar is the solidifying agent.

*E. coli* produces enzyme  $\beta$ -D-glucuronidase that hydrolyzes MUG to yield a fluorogenic product that is detectable under long-wave (366 nm) UV light.

### Formula in g/L

Bacteriological agar	12	Bile salts N° 3	1,5
Disodium phosphate	5	Monopotassium phosphate	1,5
Sodium chloride	5	Tryptone	20
Yeast extract	5	MUG (4-methylumbelliferyl- $\beta$ -D-glucuronide)	0,1

### Preparation

Suspend 50 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Sterilize in autoclave at  $121$  °C for 15 minutes.

### Instructions for use

- Filtration of a test portion of the sample through a membrane filter which retains the organisms, and placement of the membrane filter on a EC with MUG Fluorogenic Agar plate.
- Incubation at  $37\pm 2$  °C for 24-48 hours.

## Quality control

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Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Amber, slightly opalescent	7,2±0,2

## Microbiological test

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Incubation conditions: ( 37±2 °C / 24-48 h).

Microorganisms	Specification	Characteristic reaction
Enterococcus faecalis ATCC 19433	Partial inhibition	Fluorescence (-)
Escherichia coli ATCC 25922	Good growth	Fluorescence (+)
Citrobacter freundii ATCC 43864	Good growth	Fluorescence (-)

## Storage

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Temp. Min.:2 °C

Temp. Max.:8 °C

## Bibliography

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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.