



## EC Broth

Selective liquid medium for detection and enumeration of coliform bacteria and *E. coli* in water and food, according to ISO 7251.

### DESCRIPTION

EC Broth is a liquid medium used for the selective detection of coliform bacteria and *Escherichia coli* in water and wastewater, foods and other materials of sanitary importance, according to ISO 7251.

### TYPICAL FORMULA

	(g/l)
Enzymatic Digest of Casein	20.0
Lactose	5.0
Bile Salts	1.5
Dipotassium Phosphate	4.0
Monopotassium Phosphate	1.5
Sodium Chloride	5.0
Final pH 6.9 ± 0.2 at 25°C	

### METHOD PRINCIPLE

Enzymatic digest of casein provides amino acids, nitrogen, carbon, vitamins and minerals for organisms growth. Lactose is the fermentable carbohydrate. Bile salts inhibit Gram-positive bacteria, especially enterococci. Phosphates act as buffer. Sodium chloride maintains the osmotic balance of the medium.

### PREPARATION

Dehydrated medium Suspend 37.0 g of the powder in 1 liter of distilled or deionized water. Mix well. Heat to boil shaking frequently until completely dissolved. Distribute into 10 ml tubes with Durham gas collecting tube. Sterilize in autoclave at 121°C for 15 minutes.

### TEST PROCEDURE

For detection and enumeration of *E. coli*, ISO 7251 recommends to first inoculate the initial suspension of the test sample into tubes of Lauryl Sulfate Tryptose Broth (LST), ref. 21453 and Lauryl Sulfate Tryptose Broth (LST) Double, ref. 21454. After incubation at 37°C for 24-48 h, tubes are examined for turbidity and gas production. Then, each positive test tube is subcultured to a EC Broth tube and incubated at 44°C for 24-48 h.

Alternatively, EC Broth can be directly inoculated with the sample and incubated for 24 ± 2 h and up to 48 h at 35 ± 2°C for detection of coliforms or at 44.5 ± 1°C for the isolation of *Escherichia coli*.

### INTERPRETING RESULTS

Gas production is to be consider as a preliminary positive result. Indole test as well as other biochemical tests should be carried out for confirmation of *Escherichia coli* after subculturing on suitable media.

### APPEARANCE

Dehydrated medium: free-flowing, homogeneous, light beige.  
Prepared medium: clear, light amber.

### STORAGE

The powder is very hygroscopic, store the powder at 10-30°C, in a dry environment, in its original container tightly closed. Store tubes at 10-25°C away from light. Do not use the product beyond its expiry date on the label or if product shows any evidence of contamination or any sign of deterioration.

### SHELF LIFE

Dehydrated medium: 4 years.  
Medium in tubes: 2 years.

**QUALITY CONTROL**

Tubes are inoculated with the microbial strains indicated in the QC table.

Inoculum for productivity:  $\leq 100$  CFU

Inoculum for selectivity:  $> 10^3$  CFU

Incubation conditions:  $44 \pm 2^\circ\text{C}$  for  $24 \pm 2$  hours.

**QC Table.**

Microorganism		Growth	Gas
<i>Escherichia coli</i>	ATCC® 25922	Good	+
<i>Escherichia coli</i>	ATCC® 8739	Good	+
<i>Enterococcus faecalis</i>	ATCC® 29212	Inhibited	-

**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 is intended for professional use only and must be used by properly trained operators.

**DISPOSAL OF WASTE**









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

**BIBLIOGRAPHY**

1. ISO 7251:2005. Microbiology of food and animal feeding stuffs – Horizontal method for the detection of presumptive *Escherichia coli* – Most probable Number technique.
2. Clesceri, Greenberg and Eaton (1998) Standard methods for the examination of water and wastewater, 20<sup>th</sup> ed. American Public Health Association (APHA), Washington, D.C.
3. Perry C.A. and A.A. Hajna (1944) Further evaluation of EC medium for the isolation of coliform bacteria and *Escherichia coli*. Am. J. Public Health 34:735-738.

PRESENTATION		Contents	Ref.
EC Broth	Tubes	10 x 10 ml tubes	20122
EC Broth	Tubes	20 x 10 ml tubes	24122
EC Broth	Tubes	100 x 10 ml tubes	26122
EC Broth	Dehydrated medium	500 g of powder	610063
EC Broth	Dehydrated medium	100 g of powder	620063

**TABLE OF SYMBOLS**

<b>LOT</b> Batch code	 Keep away from sunlight	 Manufacturer	 Use by	 Fragile, handle with care
<b>REF</b> Catalogue number	 Temperature limitation	 Contains sufficient for <n> tests	 Caution, consult Instruction For Use	 Do not reuse



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