Lauryl Sulfate Chromogenic Broth

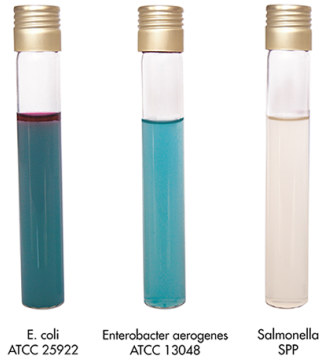
Cat. 1465

Enrichment medium for the simultaneous detection of total Coliforms and E. coli in water, foods and dairy products by the fluorogenic procedure.

Practical information

Aplications	Categories
Selective enumeration	Coliforms
Selective enumeration	Escherichia coli
Selective enrichment	Coliforms
Selective enrichment	Escherichia coli
Detection	Coliforms
Detection	Escherichia coli

Industry: Water / Food / Dairy products



Principles and uses

Lauryl Sulfate Chromogenic Broth allows the detection of total Coliform and E. coli count at the same time due to the Chromogenic-Fluorogenic Mix.

The combination of chromogenic compounds within Lauryl Sulfate Broth provide a double indicator system. This medium contains a phosphate buffer to ensure the high growth of the total number of Coliforms. Lauryl sulfate inhibits gram-positive bacteria. Coliforms and E. coli contain ß-galactosidase which cleaves the chromogenic substrate. The enzyme which cleaves MUG is highly specific to E. coli, making the simultaneous detection of total Coliforms and E. coli possible. IPTG stimulates the synthesis and increases the activity of ß-galactosidase.

The color change from amber to blue-greenish due to the reaction of the chromogenic substrate indicates the presence of coliforms. Blue fluorescence under UV light allows the rapid detection of E. coli due to the MUG.

Tryptophane promotes the indol reaction after adding Kovac's reagent (Cat. 5205). This reactive detects the microorganism capable of cleaving the tryptophane. When E. coli is present in the medium, indol is liberated and reacts with 4-dimethylaminobenzaldehyde to form a dark red dye.

Formula in g/L

Chromogenic-fluorogenic mix	0,23	Dipotassium phosphate	2,7
Monopotassium phosphate	2	Sodium chloride	5
Sodium lauryl sulfate	0,1	Sorbitol	1
Tryptophan	1	Tryptose	5

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 17 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in the autoclave at 121 ºC for 15 minutes.

Instructions for use

Inoculate and incubate at 35±2 ºC during 18-24 hours. Check the tubes under UV light (366 nm). Light blue fluorescence indicates the presence of E. coli.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)

w/o rests	Fine powder	Beige	Clear amber	6,8±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

Microorganisms	Specification	Characteristic reaction
Shigella flexneri ATCC 12022	Good growth	Medium color without changes, Fluorescence (-)
Klebsiella aerogenes ATCC 13048	Good growth	Blue-greenish medium, Fluorescence (-), Indol (-)
Klebsiella pneumonieae ATCC 13883	Good growth	Blue-greenish medium, Fluorescence (-), Indol (-)
Salmonella typhimurium ATCC 14028	Good growth	Medium color without changes, Fluorescence (-)
Escherichia coli ATCC 25922	Good growth	Blue-greenish medium, Fluorescence (+), Indol (+)
Citrobacter freundii ATCC 8090	Good growth	Blue-greensih medium, Fluorescence (-)
Escherichia coli ATCC 8739	Good growth	Blue-greenish medium, Fluorescence (+), Indol (+)

Storage

Temp. Min.:2 ºC
Temp. Max.:8 ºC

Bibliography

MANAFI, M., KNEIFEL, F., a. BASCON, S.: Fluorogenic and chromogenic substrates used in bacterial diagnosis. Microbiol. Rev. 55; 335-348 (1991).OSSMER, R.: Simultaneous Detection of Total Coliforms and E. coli-Fluorocult LMX-Broth. - 15th international Symposium/FOOD MICRO 1993. The Interntional Committee on Food Microbiology and Hygiene, Bingen/Rhine (1993).