

Technical Information

Coliform Broth, Modified

Product Code: DM 2850

Application: - Coliform Broth, Modified is recommended for the detection and confirmation of *Escherichia coli* and total coliforms from water samples, using a combination of chromogenic and fluorogenic substrates.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
Sodium chloride	5.000
Potassium sulfate	1.000
Dipotassium hydrogen phosphate	4.000
Potassium dihydrogen phosphate	1.000
Sodium lauryl sulphate	0.100
Sodium puruvate	1.000
Chromogenic substrate	0.100
Fluorogenic substrate	0.100
PTG	0.100
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Coliform Broth, Modified was designed for detection and confirmation of *Escherichia coli* and total coliforms from water samples using a combination of chromogenic and fluorogenic substrates. *Escherichia coli* can be distinguished from other coliforms by its unique ability to fluoresce in the presence of fluorogenic substrate (1, 2). The fluorogenic substrate is split by enzyme beta-glucuronidase especially present in *Escherichia coli*. The reaction is indicated by the development of a blue fluorescence under UV light. The presence of total coliforms is indicated by blue-green colourations due to the cleavage of the chromogenic substrate. IPTG amplifies enzyme synthesis and increases the activity of beta -galactosidase.

Peptone supplies essential growth nutrients and is useful for the simultaneous detection of indole production. The phosphate salts supply buffering action for rapid growth of coliforms. Sodium chloride helps to maintain the osmotic balance in the medium. Sodium lauryl sulphate makes the medium selective by preventing accompanying microflora, especially the gram-positive organisms.

Methodology

Suspend 17.4 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Shake well and dispense as desired.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity

Light yellow coloured, clear to slightly opalescent solution in tubes

Reaction

Reaction of 1.74% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH Range

6.60-7.00

Cultural Response

DM2850: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of medium	Fluorescence (under UV)
Cultural Response				
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	blue-green	negative reaction
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	blue-green	positive reaction

Storage and Shelf Life

Dried Media: Store dehydrated and prepared medium at 2-8°C in tightly closed container. Use before expiry date on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Feng P.C.S. and Hartman P.A. ,1982, J.Appl. Environmental Microbiol. 43. 1320-1323.
2. Harsen W., and Yourassowsky, 1984, J. Clin. Microbiol. 20. 1177-1179.\

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