

Technical Information

Boric Acid Broth

Product Code: DM 1216

Application:- For the detection and presumptive identification of Escherichia coli on the basis of this organism to grow at 43°C and form gas in the presence of boric acid

Composition**

Ingredients	Gms / Litre
Proteose peptone	10.000
Lactose	5.000
Dipotassium phosphate	12.200
Monopotassium phosphate	4.100
Boric acid	3.250
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Boric acid has been used as a medium for the detection of *E.coli* from foods and water. This medium has been devised by Levine [et.al](#) ⁽¹⁾. When isolates from agar slant or samples are inoculated into lactose broth and boric acid broth only *E.coli* grow and produce gas in both the broths, while *Aerobacter* species grow only in lactose broth ⁽²⁾.

Proteose peptone supplies growth supplements and nitrogen to the microorganisms. Lactose is the fermentable carbohydrate. Phosphates buffer the medium. Boric acid allows the growth of *E.coli*.

Methodology

Suspend 34.6 grams of powder media in 1000 ml distilled water. Dispense in test tubes with inverted Durham's tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. For inocula larger than one ml, the medium should be prepared in proportionately greater concentration. A pH indicator may be added if desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

Cream to pink homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution

Reaction

Reaction of 3.46% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range 6.80-7.20

Cultural Response/Characteristics

DM1216: Cultural characteristics observed after an incubation at 43°C for 18 - 24 hours.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Inoculum (CFU)	Growth	Gas
<i>Escherichia coli</i> ATCC 25922	50-100	Luxuriant	Positive reaction
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	Luxuriant	Negative reaction
<i>Salmonella Typhi</i> ATCC6539	50-100	luxuriant	Negative reaction

Storage and Shelf Life

Dried media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

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

Further Reading

1. Levine, M., Epstein S.S., 1934. Differential reactions in the colon group of bacteria. American Journal of Public Health. 24-505-5 10
2. A. Njoku-Obi and C. E. Skinner. Boric Acid Lactose Broth as a Medium for the Detection of Fecal Coliform Bacteria. Appl Microbiol. 1957 March; 5(2): 80-82.

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