



Boric Acid Broth

M216

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

Directions

Suspend 34.55 grams in 1000 ml distilled water. Dispense in test tubes with inverted Durham's tubes. Sterilize by autoclaving at 15 lbs pressure (1210C) 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.

Principle And Interpretation

Boric acid has been used as a medium for the detection of *E.coli* from foods and water. This medium has been suggested 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* .

Quality Control

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

6.80-7.20

Cultural Response

M216: Cultural characteristics observed after an incubation at 43°C for 18 - 24 hours.

Organism	Inoculum (CFU)	Growth	Gas
Cultural Response			
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	Positive reaction
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	inhibited	Negative reaction
<i>Salmonella Typhi</i> ATCC 6539	50-100	inhibited	Negative reaction

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

1. Levine, M., Epstein S.S., 1934. Differential reactions in the colon group of bacteria. American Journal of Public Health. 24-505-510
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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