Tryptone Yeast Extract Agar w/ BCP

M1193

Tryptone Yeast Extract Agar with BCP is used for isolation and enumeration of *Enterobacteriaceae* .

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Yeast extract	1.500
Dextrose	10.000
Sodium chloride	5.000
Bromocresol purple	0.015
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 41.52 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Dispense in tubes and cool the tubed medium in a slanting position.

Principle And Interpretation

Enterobacteriaceae are widespread in nature found in water, soil or as a parasite on different animals and plants. Many members of this group form the normal gut microbial flora of humans. It also includes pathogens such as *Salmonella* , *Klebsiella* and others. It can easily contaminate foods, milk products from their natural environment thereby causing foodborne illnesses (1). Tryptone Yeast Extract Agar with BCP is formulated as per ISO specifications (ISO 7402: 1993) (2) and is recommended for the isolation and enumeration of *Enterobacteriaceae* .

Casein enzymic hydrolysate and yeast extract provide nitrogenous compounds, vitamin B complex and other growth nutrients. Dextrose is the fermentable carbohydrate and bromocresol purple acts as the pH indicator, with colour change from purple to yellow in acidic conditions. Sodium chloride maintains osmotic equilibrium.

Enumeration of *Enterobacteriaceae* can be carried out by either the MPN Technique or colony count technique.

MPN Technique : Inoculate 10 ml of the test sample or 10 ml of the initial suspension into 3 tubes of double strength EE Broth (M287I) and 1 ml of sample into three tubes of single strength tubes of EE Broth (M287I). Inoculate another three single strength tubes of EE Broth (M287I) with 1 ml of the first decimal dilution (10-1) of the test sample. Incubate these nine tubes at 35-37°C for 24 hours. Streak a loopful from each tube onto VRBGA w/o Lactose (M581). Incubate plates at 35-37°C for 24 hours. On incubation, presumptive typical red to pink colonies or colourless, mucoid colonies are confirmed biochemically.

Colony count technique : Transfer 1 ml of the test sample in two sterile Petri plates. To another two sterile Petri dishes, transfer 1 ml of the first decimal dilution. Repeat the procedure for further dilutions. Into each Petri dish, aseptically add 15 ml of sterile, cooled VRBGA w/o Lactose (M581). Mix and cool. After complete solidification, add a covering layer of 10 ml to 15 ml of sterile VRBGA w/o Lactose (M581), cooled to 45-50°C. Allow to solidify and incubate at 35-37°C for 24 hours. Select presumptive colonies, as described in MPN Technique and confirm biochemically.Biochemical testing is done by inoculation in Tryptone Yeast Extract Agar w/ BCP to check fermentation reactions (2).

Quality Control

Appearance

Cream to pale green homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Purple coloured clear to slightly opalescent gel forms in tubes as slants.

Reaction
Reaction of 4.15% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
M1193: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of Medium
Cultural Response			
Enterobacter aerogenes ATCC13048	50-100	luxuriant	yellow
Klebsiella pneumoniae ATCC 13883	50-100	luxuriant	yellow
Escherichia coli ATCC 25922	50-100	luxuriant	yellow
Salmonella Typhi ATCC 6539	50-100	luxuriant	yellow
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	yellow

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

Reference
1. Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology. Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam
2. International Organization for Standardization, (ISO), 1993, Draft ISO/DIS, 7402.

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