

MacConkey Broth Purple w/BCP

GM083

MacConkey Broth Purple w/BCP is used for presumptive identification of coliforms from variety of specimens such as water, milk and food etc.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	20.000
Lactose	10.000
Sodium taurocholate	5.000
Sodium chloride	5.000
Bromocresol purple	0.010
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40.01 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Distribute into test tubes with inverted Durham tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

MacConkey Broth Purple w/ BCP is a modification of MacConkey Medium (1). Childs and Allen (2) demonstrated the inhibitory effect of neutral red and therefore substituted it by the less inhibitory bromocresol purple dye. BCP is more sensitive in recording pH variation in the medium.

Peptic digest of animal tissue provides essential growth nutrients. Lactose is the fermentable carbohydrate. Sodium taurocholate inhibits gram-positive organisms. Sodium chloride maintains the osmotic balance of the medium. Bromocresol purple is the pH indicator in the medium which turns yellow under acidic condition. Lactose fermentation turn the medium yellow due to the acidity produced on lactose fermentation. The colour change of the dye is observed when the pH of the medium falls below 6.8. Lactose non-fermenting organisms like *Salmonella* and *Shigella* do not alter the appearance of the medium.

Liquid specimens are directly inoculated while solids have to be homogenized in appropriate diluents such as physiological saline, phosphate buffers, etc. The inoculation must be effected at 10% v/v in Durhams tubes. If the inoculum is greater than 1 ml, it is necessary to use the medium at double strength, inoculating equal volumes of specimen and medium.

Quality Control

Appearance

Cream to yellow coloured granular media

Colour and Clarity of prepared medium

Purple coloured clear to slightly opalescent solution in tubes

Reaction

Reaction of 4.0% w/v aqueous solution at 25°C. pH:-7.4±0.2

pH

7.20-7.60

Cultural Response

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

Organism	Inoculum (CFU)	Growth	Acid production	Gas production
Cultural Response <i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	positive reaction, yellow colour	positive reaction

<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	positive reaction, yellow colour	positive reaction
<i>Salmonella Choleraesuis</i> ATCC 12011	50-100	fair-good	negative reaction	negative reaction
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited		
<i>Escherichia coli</i> ATCC 8739	50-100	luxuriant	positive reaction, yellow colour	positive reaction
<i>Escherichia coli</i> NCTC 9002	50-100	luxuriant	positive reaction, yellow colour	positive reaction
<i>Staphylococcus aureus</i> ATCC 6538	$\geq 10^3$	inhibited		

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. MacConkey A. T., 1900, The Lancet, ii: 20.
2. Childs E. and Allen, 1953, J. Hyg: Camb. 51:468-477

Revision : 00 / 2014



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