



MacConkey Broth Purple with BCP

M083I

MacConkey Broth Purple with BCP is recommended for the presumptive identification of coliforms from water.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	20.000
Lactose	10.000
Bile salts	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. Dispense into test tubes with inverted Durham tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubes before inoculation.

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. MacConkey Broth Purple w/ BCP is recommended by ISO committee (3) with the inclusion of bile salts, as a presumptive test medium for identification of coliforms from water and other materials of sanitary importance.

Peptic digest of animal tissue provides essential growth nutrients. Lactose is the fermentable carbohydrate. Bile salts or 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 fermenting organisms 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. 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 homogeneous free flowing powder

Colour and Clarity of prepared medium

Purple coloured clear to slightly opalescent solution in tubes

Reaction

Reaction of 3.45% w/v aqueous solution at 25°C. pH:-7.4±0.2

pH

7.20-7.60

Cultural Response

Growth Promotion is carried out in accordance with the harmonized method of IP. For organisms not specified in pharmacopoeia, cultural response was observed after an incubation at 30-35°C for 18-48 hours.

Growth promoting properties

Clearly visible growth of microorganism comparable to that previously obtained with previously tested and approved lot of medium occurs at the specified temperature for not more than the shortest period of time specified inoculating ≤ 100 cfu (at 42-44°C for 24 hours).

Inhibitory properties

No growth of the test microorganism occurs for the specified temperature for not less than longest period of time specified inoculating ≥ 100 cfu(at 42-44°C for ≥ 48 hours).

Cultural Response

Organism	Inoculum (CFU)	Growth	Acid	Gas	Incubation temperature	Incubation period
Growth promoting						
<i>Escherichia coli</i> ATCC 8739	50 -100	luxuriant	positive reaction, yellow colour	positive reaction	42 -44 °C	≤ 24 hrs
Inhibitory						
<i>Staphylococcus aureus</i> ATCC 6538	$\geq 10^3$	inhibited			42 -44 °C	≥ 48 hrs
Additional Microbiological testing						
<i>Escherichia coli</i> ATCC 25922	50 -100	luxuriant	positive reaction, yellow colour	positive reaction	30 -35 °C	18 -24 hrs
<i>Escherichia coli</i> NCTC 9002	50 -100	luxuriant	positive reaction, yellow colour	positive reaction	30 -35 °C	18 -24 hrs
<i>Enterobacter aerogenes</i> ATCC 13048	50 -100	luxuriant	positive reaction, yellow colour	positive reaction	30 -35 °C	18 -24 hrs
<i>Salmonella Choleraesuis</i> ATCC 12011	50 -100	fair-good	negative reaction	negative reaction	30 -35 °C	18 -24 hrs
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited			30 -35 °C	≥ 48 hrs

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.
3. International Organization for Standardization (ISO), 1990, Draft ISO/ DIS 9308-2.

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