

## Technical Information

### MacConkey Broth Purple with BCP

**Product Code :DM 1083I**

**Application:** 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

#### Principle & Interpretation

MacConkey Broth Purple w/ BCP is a modification of MacConkey Medium <sup>(1)</sup> in which Childs and Allen <sup>(2)</sup> demonstrated the inhibitory effect of neutral red and replaced it by the less inhibitory bromocresol purple dye. BCP is more accurate & sensitive in indicating pH variation in the medium. MacConkey Broth Purple w/ BCP is also recommended by ISO committee <sup>(3)</sup> with the addition of bile salts, it is used 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.

#### Methodology

Suspend 40.01 grams of powder media in 1000 ml distilled water. Shake well & 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.

#### Quality Control

##### Physical 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 4.01% w/v aqueous solution at 25°C. pH:-7.4±0.2

##### pH range

7.20-7.60

### Cultural Response/Characteristics

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

DM 1083I 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  $\leq 100$  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  $\geq 100$ cfu (at 42-44°C for  $\geq 48$  hours).

Organism	Inoculum (CFU)	Growth	Acid	Gas	Incubation temperature	Incubation period
<b>Growth promoting</b> <i>Escherichia coli</i> ATCC 8739	50-100	luxuriant	Positive reaction, yellow colour	Positive reaction	42-44 °C	$\leq 24$ hrs
<b>Inhibitory</b> <i>Staphylococcus aureus</i> ATCC 6538	$>10^3$	inhibited			42-44 °C	$\geq 48$ hrs
<b>Additional Microbiological testing</b>						
<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	Fair-good	Positive reaction, yellow colour	Positive reaction	30-35 °C	18-24 hrs
<i>Salmonella Choleraesuis</i> ATCC 12011	50-100	Fair-good	Positive reaction, yellow colour	Positive reaction	30-35 °C	18-24 hrs
<i>Staphylococcus aureus</i> ATCC 25923	$>10^3$	inhibited	Negative reaction	Negative reaction	30-35 °C	$\geq 48$ hrs

## 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° in sealable plastic bags for 2-5 days.

## Further Reading

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.

## Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.
- Do not use the products if it fails to meet specifications for identity and performance parameters.