

MacConkey Broth with Neutral Red BIS

Intended Use

MacConkey Broth with Neutral Red BIS is a standard medium used for enrichment and enumeration of coliforms in compliance with BIS specification IS:5887 (Part 1 and Part 2) 1976.

Summary

MacConkey Broth with Neutral Red BIS is a modification of the original bile salt broth recommended by MacConkey, which contained 0.5% sodium taurocholate and litmus as the indicator. In later publications, MacConkey suggested variations of this formula using neutral red as the indicator instead of litmus. Bile salts in the medium replaces the original sodium taurocholate to inhibit growth of Gram-positive organisms.

The above-mentioned MacConkey Broth is recommended for use in microbiological examination of foodstuffs and for direct plating and inoculation of water samples for coliform counts.

Principle

Peptone provides amino acids and other growth factors. Lactose is a carbon and energy source. Bile salts inhibit the growth of Gram-positive organisms. Neutral red is the pH indicators. Sodium chloride maintains the osmotic balance.

Formula*

Ingredients	g/L
Peptone	20.0
Lactose	10.0
Bile Salts	5.0
Sodium Chloride	5.0
Neutral Red	0.075
Final pH (at 25°C)	7.5 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability

Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen

Food and Dairy samples; Water samples

Specimen Collection and Handling

Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 40.07 g of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
2. Boil with frequent agitation to dissolve the powder completely.
3. Dispense into tubes containing inverted Durham's tubes.
4. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.

Quality Control

Dehydrated Appearance: Light yellow to pink coloured, homogenous, free flowing powder.

Prepared Appearance: Red coloured, clear solution without any precipitate.

Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is observed after an incubation at 30°C-35°C for 18-24 hours.

Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 18 hours.
Inhibitory Properties: No growth of the test microorganism occurs for the specified temperature and not less than the longest period of the time specified, inoculating >100 cfu of the appropriate microorganism at 30°C-35°C for 24 hours.

Organism (ATCC)	Growth	Acid	Gas
<i>Klebsiella aerogenes</i> (13048)	Good	+	+
<i>Escherichia coli</i> (25922)	Good	+	+
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhimurium</i> (14028)	Good	-	-

Inhibitory

<i>Staphylococcus aureus</i> subsp. <i>aureus</i> (6538)	Inhibited	-	-
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Key:

For Acid (+) - Positive

For Acid (-) - Negative

For Gas (+) - Positive reaction (Bubble formation in Durham's tube)

For gas (-) - Negative reaction (No bubble formation in Durham's tube)

Note: For inhibition no growth of test microorganism should occur.

Interpretation of Results

1. Lactose fermenting organisms grow well, producing acid causing the medium to turn yellow. Gas is also produced which collects in the inverted Durham's tubes.
2. Non-lactose fermenting organisms produce good growth but will not produce acid or gas.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. IP. 1996, Ministry of Health and Family Welfare, Govt. of India, Vol.2.
2. US Pharmacopeial Convention, Inc. 2001, The United States Pharmacopoeia 25/NF 20-2002. The US Pharmacopeial Convention, Inc; Rockville, Md.
3. Data on file: Microxpress[®], A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201130260100	Dehydrated Culture Media	100 g
201130260500	Dehydrated Culture Media	500 g

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.
