

MacConkey Agar without CV, NaCl and with 0.15% Bile Salts Plate

Intended Use

MacConkey Agar without CV, NaCl and with 0.15% Bile Salts Plate is used for selective isolation and differentiation of lactose fermenting and non-lactose fermenting enteric bacteria.

Summary

MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of specimens like water, faeces and other sources suspected of containing these microorganisms. The original MacConkey Agar was based on the bile salt neutral red lactose agar of MacConkey, which was used to differentiate strains of *Salmonella typhosa* from members of the coliform group. Subsequently MacConkey Agar and Broth have been recommended for use in microbiological examination of foodstuffs and for direct plating/inoculation of water samples for coliform counts. These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products and pharmaceutical preparations.

MacConkey Agar with Crystal Violet and Salts is designed to achieve more differentiation of lactose fermenters and non-lactose fermenters, for the promotion of superior growth of enteric pathogens. It is recommended by USP for microbial limit tests.

MacConkey Agar w/o CV, NaCl and w/ 0.5% Sodium taurocholate is a modification of the original formulation with the exclusion of crystal violet and inclusion of sodium taurocholate instead of bile salts.

Principle

Original medium contains protein, bile salts, sodium chloride and two dyes. The selective action of this medium is attributed to bile salts, which are inhibitory to most species of gram-positive bacteria. Pancreatic digest of gelatin and peptone (meat and casein) provide nitrogen and other nutrients, while lactose monohydrate is the carbohydrate source. Bile salts and crystal violet are selective agents that inhibit the growth of Gram-positive bacteria but allow enteric gram-negative bacteria to grow. Neutral red is the pH indicator. Sodium chloride maintains osmotic balance.

MacConkey Agar without crystal violet is designed such that it allows the growth of *Staphylococcus*, *Enterococcus*, and *Mycobacterium* species.

Formula*

Ingredients	g/L
Peptone	20.0
Lactose	10.0
Bile Salts	1.5
Neutral Red	0.075
Agar	12.0

*Adjusted to suit performance parameters.

Additional Material Required

Bacteriological Incubator.

Instructions for use

1. Open ready prepared plate pack and remove the plate aseptically.
2. Inoculate/streak the plate as per standard procedure.
3. Incubate the plates in inverted position.

Reading and interpretation

1. After incubation, observe the microbial growth and count the colonies.
2. Interpretation is assured by user.

Quality Control

Appearance: Gel with smooth and even surface, without any cracks, bubbles and drying or shrinking of media.

Colour of Medium: Orange red coloured, slightly opalescent gel forms in petriplates.

Quantity of Medium: 27 ± 2 g in 90 mm petriplate.

pH at 25°C ± 2°C: 7.1 ± 0.2

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

Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time, inoculating ≤100 cfu of appropriate microorganism.

Indicative Properties: The test results observed are within the specified temperature and time, inoculating ≤ 100 cfu of appropriate microorganism.

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 greater than 100 cfu of the appropriate microorganism.

Growth Promoting + Indicative

Organism (ATCC)	Growth	Colour of Colony
<i>Escherichia coli</i> (25922)	Good	Pink with bile precipitate
<i>Klebsiella aerogenes</i> (13048)	Good	Pink
<i>Proteus hauseri</i> (13315)	Good	Colourless
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhimurium</i> (14028)	Good	Colourless
<i>Enterococcus faecalis</i> (29212)	Partial Inhibition	Pale pink

Inhibitory

<i>Staphylococcus aureus</i> subsp. <i>aureus</i> (25923)	Inhibited	---
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Note: For inhibition no growth of test microorganism should occur.

Storage and Shelf Life

1. Store between 15°C-25°C to avoid water condensation. Condensation can be prevented by avoiding quick temperature shifts and mechanical stress.
2. Under optimal conditions, the medium has a shelf life of 3 months. Use before expiry mentioned on the label.

Reference

1. Downes F P and Ito K(Eds.), 2001, Compendium of Methods for The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C
2. Eaton A. D., Clesceri L. S. and Greenberg A W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.5.
3. MacConkey, 1900, The Lancet, ii:20.
4. MacConkey, 1905, J. Hyg., 5:333.
5. Wehr H M and Frank J H., 2004, Standard Methods for the Examination of Dairy Products, 17th ed., APHA Inc., Washington, D.C.
6. The United States Pharmacopoeia, 2011, The United States Pharmacopoeial Convention. Rockville, MD.
7. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product	Pack Size
205130920100	MacConkey Agar without CV, NaCl and with 0.15% Bile Salts Plate	100 Plates
205130920020	MacConkey Agar without CV, NaCl and with 0.15% Bile Salts Plate	20 Plates

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.