MacConkey Agar Base

Intended Use
MacConkey Agar Base is used for studying fermentation reactions of coliforms by adding the desired carbohydrate.

Summary
MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens. MacConkey Agar Base is used for studying carbohydrate fermentation reactions of coliforms by adding carbohydrates either individually or in combination.

Principle
MacConkey Agar Base has peptic digest of animal tissue and proteose peptone, which provide nitrogen, carbon and vitamin source for the growth of bacteria. This medium does not contain carbohydrates. However, for studying fermentation reaction, carbohydrate of interest has to be added while preparing medium. The selective action of this medium is attributed to bile salts and crystal violet, which are inhibitory to most of the species of Gram-positive bacteria. Gram-negative bacteria usually grow well on the medium and are differentiated by their ability to ferment carbohydrates. Carbohydrate fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. The red colour is due to production of acid from carbohydrate, absorption of neutral red and subsequent colour change of the dye when the pH of the medium falls below 6.8. Sodium chloride helps to maintain osmotic balance.

Formula*

Ingredients	**g/L**
Peptic Digest of Animal Tissue	17.0
Proteose Peptone	3.0
Bile Salts	1.5
Sodium Chloride	5.0
Crystal Violet	0.001
Neutral Red	0.03
Agar	13.5
Final pH (at 25°C)	7.1 ± 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.

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 40.03 g of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
3. Boil with frequent agitation to dissolve the powder completely. AVOID OVERHEATING.
4. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
5. Cool to 45°C-50°C and (For MacConkey Agar Base add sterile1% w/v desired carbohydrate solution) pour into sterile petridishes.

Quality Control

Dehydrated Appearance: Beige to pinkish beige coloured, homogenous, free flowing powder.
Prepared Appearance: Red with purplish tinge, clear to slightly opalescent gel forms in petridishes.
Cultural Response: Cultural characteristics observed after an incubation of 18-24 hours at 35°C-37°C.

Organism (ATCC)	Growth	Colour of Colony
Without Addition of 1% Lactose		
Escherichia coli (25922)	Good	Colourless
Staphylococcus aureus subsp. *aureus* (25923)	Inhibited	-
Proteus hauseri (13315)	Good	Colourless
Klebsiella aerogenes (13048)	Good	Colourless
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	Colourless
Shigella flexneri serotype 2b (12022)	Good	Colourless
Enterococcus faecalis (29212)	Inhibited	-
With Addition of 1% Lactose		
Escherichia coli (25922)	Good	Pinkish red with bile precipitate
Staphylococcus aureus subsp. *aureus* (25923)	Inhibited	-
Proteus hauseri (13315)	Good	Colourless
Klebsiella aerogenes (13048)	Good	Pink
Salmonella *enterica* subsp. *enterica* serovar *Typhimurium* (14028)	Good	Colourless
Shigella flexneri serotype 2b (12022)	Good	Colourless
Enterococcus faecalis (29212)	Inhibited	-

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. MacConkey, 1900, The Lancet, ii:20.
2. MacConkey, 1905, J. Hyg., 5:333.
3. Holt, Harris and Teague, 1916, J. Infect. Dis., 18:596.
4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201130110100	Dehydrated Culture Media	100 g
201130110500	Dehydrated Culture Media	500 g