

Technical Information

MacConkey MiVeg Agar Base

Product Code : VM2024

Application:- This medium is used for studying carbohydrate fermentation reactions of coliforms by adding carbohydrates either individually or in combination.

Composition

Ingredients	Gms / Litre
MiVeg peptone	17.000
MiVeg peptone No. 3	3.000
Synthetic detergent	1.500
Sodium chloride	5.000
Neutral red	0.030
Crystal violet	0.001
Agar	13.500
Final pH (at 25°C)	7.1±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MacConkey MiVeg Agar Base is prepared by using vegetable peptone instead of animal based peptones thereby making the medium free from BSE/ TSE risks. This medium is the modification of MacConkey Agar which is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (1,2). Subsequently by adding carbohydrate in this medium like the conventional medium have been recommended for use in Microbiological examination of foodstuffs (3) and for direct plating of water samples for coliform counts (4,5).

It contains protein, synthetic detergents, sodium chloride and two dyes. Crystal violet and synthetic detergents makes the medium selective which are inhibitory to most species of gram-positive bacteria. Gram-negative bacteria usually grow well on the medium and are differentiated by their ability to ferment carbohydrate. Carbohydrate fermenting strains produces red or pink colonies. Due to production of acid, absorption of neutral red and a subsequent colour change of the dye occurs when the pH of medium falls below 6.8.

Methodology

Suspend 40.03 grams of powder media in 1000 ml distilled water. Mix thoroughly. Add 10 grams of lactose or other carbohydrates of choice. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Quality Control

Physical Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm comparable with 1.35% Agar gel.

Colour and Clarity of prepared medium

Red with purplish tinge clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.0 % w/v aqueous solution pH: 7.1 ±0.2 at 25°C

pH range

6.90-7.30

Cultural Response/Characteristics

Cultural characteristics observed with added 1% lactose, after an incubation at 35-37°C for 18-24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	≥50%	pink to red
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	≥50%	pink to red
<i>Enterococcus faecalis</i> ATCC 29212	50-100	fair to good	30-40%	pink to red
<i>Proteus vulgaris</i> ATCC 13315	50-100	luxuriant	≥50%	colourless
<i>Salmonella Paratyphi A</i> ATCC 9150	50-100	luxuriant	≥50%	colourless
<i>Shigella dysenteriae</i> ATCC 13313	50-100	fair to good	30-40%	colourless
<i>Salmonella Paratyphi B</i> ATCC 8759	50-100	luxuriant	≥50%	colourless
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	luxuriant	≥50%	colourless
<i>Salmonella Typhi</i> ATCC 6539	50-100	luxuriant	≥50%	colourless
<i>Staphylococcus aureus</i> ATCC 25923	≥10 ³	inhibited	0%	

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, 1905, J. Hyg., 5:333.

2. Speck M. (Ed.), 1985, Compendium of methods for the Microbiological Examination of Foods, 2nd ed., APHA Washington, D.C.

3. Greenberg A.E., Clesceril S. and Eaton A.D., (Eds.), 1992, Standard Methods for the Examination of Water and Wastewater, 18th ed., APHA, Washington, D.C.

4. Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th ed., APHA, Washington, D.C.

5. MavFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform 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
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