Technical Information

MacConkey MiVeg Agar w/o CV and NaCl, w/0.0075% NR and 1.2% Agar

Product Code :VM1082A

Application:- MacConkey MiVeg Agar w/o CV and NaCl, w/0.0075% NR and 1.2% Agar is used for the cultivation and differentiation of enteric bacteria, restricting swarming of *Proteus* species from specimens such as urine which may contain large number of *Proteus* species as well as potentially pathogenic gram- positive organisms.

Composition

Ingredients	Gms / Litre
MiVeg peptone	23.000
Lactose	10.000
Synthetic detergent	2.000
Neutral red	0.075
Agar	12.000
Final pH (at 25°C)	7.4±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

MacConkey MiVeg Agar w/o CV and NaCl, w/0.0075% NR and 1.2% Agar is prepared by using vegetable peptones instead of animal peptones, making the medium BSE-TSE risks free. This medium can be used for the same purpose of MacConkey Agar w/o CV, NaCl w/0.5% Bile Salts . MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (1, 2). This medium is a modification of the original formulation with the exclusion of crystal violet and sodium chloride. Subsequently MacConkey Agar was recommended for use in microbiological examination of foodstuffs (3) and for direct plating / inoculation of water samples for coliform counts (4). These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products (5) and pharmaceutical preparations (6). The original medium contains protein, bile salts, sodium chloride and two dyes. This medium prevents the swarming of *Proteus* species that are generally encountered in pathological specimens. Also potentially pathogenic gram-positive organisms can be isolated using this medium.

Synthetic Detergent present in the medium makes it selective which is 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 lactose. Due to production of acid from lactose, absorption of neutral red and a subsequent colour change of the dye occurs when the pH of medium falls below 6.8. Lactose fermenting strains produces red or pink colonies while non- Lactose fermenting strains, such as *Shigella* and *Salmonella* are colourless and transparent and typically does not change the colour of the medium. *Yersinia enterocolitica* may appear as small, non-lactose fermenting colonies after incubation at room temperature.

Methodology

Suspend 47.07 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling with gentle swirling to dissolve the agar completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Avoid overheating. Cool to 45 -50°C and pour into sterile Petri plates. The surface of the medium should be dry when inoculated.

Note: For the cultivation of *Vibrio species*, add 5 grams per litre of Sodium chloride before sterilization.

Quality Control

Physical Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% agar gel.

Colour and Clarity of prepared medium

Orange red clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.7 % w/v aqueous solution pH: 7.4 ±0.2 at 25°C

pH range

7.20-7.60

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	>=50%	pink-red
Enterococcus faecalis ATCC29212	50-100	fair-good	30-40%	pale pink-red
Escherichia coli ATCC 25922	50-100	Good-luxuriant	>=50%	pink-red
Proteus vulgaris ATCC 13315	50-100	Good-luxuriant	>=50%	colourless
Salmonella Paratyphi *A ATCC 9150*	50-100	Good-luxuriant	>=50%	colourless
Salmonella Paratyphi *B ATCC 8759*	50-100	Good-luxuriant	>=50%	colourless
Salmonella Enteritidis *ATCC13076*	50-100	Good-luxuriant	>=50%	colourless
Salmonella Typhi *ATCC 6539*	50-100	luxuriant	>=50%	colourless
Shigella flexneri ATCC 12022	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus ATCC 25923	50-100	fair-good	30-40%	pale pink-red

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1.MacConkey, 1900, The Lancet, ii:20.
2.MacConkey, 1905, J. Hyg., 5:333.
3.Downes F. P and Ito K. (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th ed., APHA, Washington,D.C.
4.Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.
5.Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
6. The United States Pharmacopoeia, 2011, USP34/NF29, The United States Pharmacopoeial Convention, Rockville, M.D.

Disclaimer :

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