Technical Information

MacConkey MiVeg Agar w/o CV and NaCl, w/0.004% NR and 2.0% Agar

Product Code : VM1082

Application:- MacConkey MiVeg Agar w/o CV and NaCl, w/0.004% NR and 2.0% 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	24.500
Lactose	10.000
Synthetic detergent	0.500
Neutral red	0.040
Agar	20.000
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/0.004% NR and 2.0% Agar is prepared by using vegetable peptones instead of animal peptones, so the medium becomes BSE-TSE risks free. This medium can be used for the same purpose of MacConkey Agar. It is a differential medium which restricts the swarming of most *Proteus* species, thereby makes the detection and isolation of enteric organisms so ease. This medium is especially useful for culturing urine specimens which may contain *Proteus* species in large number as well as potentially pathogenic gram positive organisms. *Enterococci* produce compact tiny reddish colonies either on or beneath the surface.

MacConkey Agar in general is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (1, 2). Subsequently MacConkey media have been 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).

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

Methodology

Suspend 55.04 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 2.0% agar gel.

Colour and Clarity of prepared medium

Orange red clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 5.5 % 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	luxuriant	>=50%	pink-red
Proteus vulgaris ATCC 13315	50-100	luxuriant	>=50%	colourless
Salmonella Paratyphi *A ATCC 9150*	50-100	luxuriant	>=50%	colourless
Salmonella Paratyphi *B ATCC 8759*	50-100	luxuriant	>=50%	colourless
Salmonella Enteritidis *ATCC13076*	50-100	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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