MacConkey HiVeg™ Agar Base

MV1024

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

Composition**

Ingredients	Gms / Litre
HiVeg peptone	17.000
HiVeg 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

Directions

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

Principle And Interpretation

This medium is prepared by using vegetable peptone in place of animal based peptones which makes the medium free of 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 MacConkey HiVeg Agar Base with added carbohydrate 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).

Medium contains protein, synthetic detergents, sodium chloride and two dyes. The selective action of this medium is attributed to crystal violet and synthetic detergents, 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 grow as red or pink. Their red colour is due to production of acid, absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8.

Quality Control

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 at 25°C. pH : 7.1±0.2

pH
6.90-7.30

Cultural Response
MV1024: Cultural characteristics observed with added 1% lactose, after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony

Cultural Response

Escherichia coli ATCC 25922	50-100	luxuriant	>=50%	pink to red
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	>=50%	pink to red
Enterococcus faecalis ATCC 29212	50-100	fair to good	30-40%	pale pink to red
Proteus vulgaris ATCC 13315	50-100	luxuriant	>=50%	colourless
Salmonella Paratyphi A ATCC 9150	50-100	luxuriant	>=50%	colourless
Shigella dysenteriae ATCC 13313	50-100	fair to good	30-40%	colourless
Salmonella Paratyphi B ATCC 8759	50-100	luxuriant	>=50%	colourless
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	>=50%	colourless
Salmonella Typhi ATCC 6539	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	0%	

Storage and Shelf Life

Store below 30ºC in tightly closed container and the prepared medium at 2-8ºC. Use before expiry date on the lable.

Reference

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.

Revision : 1 / 2011