Technical Information

EMB MiVeg Agar

Product Code : VM1317

Application:- EMB MiVeg Agar (Eosin Methylene Blue MiVeg Agar) are recommended for the isolation and differentiation of gram negative enteric bacteria from clinical and non-clinical specimens.

Composition**

Ingredients	Grams/Litre
MiVeg peptone	10.00
Dipotassium phosphate	2.00
Lactose	5.00
Sucrose	5.00
Eosin - Y	0.40
Methylene blue	0.065
Agar	13.50
Final pH (at 25°C)	7.2 ± 0.2

** Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

This media is prepared by adding MiVeg peptone in place of peptic digest of animal tissue thus making it free from BSE/TSE risks. EMB MiVeg Agar is the modification of Eosin Methylene Blue (EMB) Media which are originally devised by Holt-Harris and Teague (1) and further modified by Levine (2).

Methylene blue and Eosin-Y in the medium inhibit gram positive bacteria to a limited degree. These dyes serve as differential indicators in response to the fermentation of carbohydrates. The ratio of eosin and methylene blue is adjusted approximately to 6:1. Sucrose is added to the medium as an alternative carbohydrate source for typically lactose- fermenting, gram-negative bacilli, which on occasion do not ferment lactose or do so slowly. The coliforms produce purplish black colonies due to taking up of methylene blue- eosin dye complex, when the pH drops. The dye complex is absorbed into the colony. Nonfermenters probably raise the pH of surrounding medium by oxidative deamination of protein, which solubilizes the methylene blue-eosin complex resulting in colourless colonies (3). MiVeg peptone serves as nitrogen source. Some strains of *Salmonella* and *Shigella* species do not grow in the presence of eosin and methylene blue. Inoculated plates should be protected from light. Further tests are required to confirm the isolates.

Methodology

Suspend 36.0 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to dissolve the medium completely. Dispense and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. AVOID OVERHEATING. Cool to 50°C and shake the medium in order to oxidize the methylene blue (i.e. to restore its blue colour) and to suspend the flocculent precipitate. (If EMB Agar is inoculated on the same day, it may be used without autoclave sterilization). Pour aseptically into sterile petriplates.

Precaution: Store the medium away from light to avoid photooxidation.

Quality Control

Physical Appearance

Light purple coloured, homogeneous, free flowing powder, may contain minute to small dark red purple particles.

Gelling

Firm, comparable with 1.35% Agar gel.

Colour and Clarity of prepared medium

Reddish-purple coloured, opalescent gel or solution having greenish cast forms in petri plates.

Reaction

Reaction of 3.6% w/v aqueous solution of the medium at 25°C pH 7.2 ± 0.2.

pH range

7.0-7.4

CulturalResponse/Characteristics

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

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Escherichia coli (25922)	10^3-10^4	luxuriant	>70%	Purple with black centre with green metallic sheen
Proteus mirabilis (25933)	10^3-10^4	luxuriant	>70%	Colourless
Salmonella serotype Typhimurium (14028)	10^3-10^4	luxuriant	>70%	Colourless
Enterobacter aerogenes (13048)	10^3-10^4	good	>70%	Pink without sheen
Klebsiella pneumoniae (13883)	10^3-10^4	good	>70%	Pink, mucoid
Staphylococcus aureus (25923)	10^3-10^4	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: 2-8^0 in sealable plastic bags for 2-5 days

Further Reading

1. Holt-Harris and Teague,1916, J. Infect. Dis., 18 : 596.
2. Levine, 1918, J. Infect. Dis., 23:43.
3. Howard B.J., 1994, Clinical and Pathogenic Microbiology, 2nd ed., Mosby Year Book, Inc.

Disclaimer

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