Technical Information

EMB MiVeg Broth

Product Code : VM1503

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

Composition

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

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

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

Methylene blue and Eosin-Y 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. Non-fermenters probably raise the pH of surrounding medium by oxidative deamination of protein, which solubilizes the methylene blue-eosin complex thereby resulting in colourless colonies (3). MiVeg peptone in the medium supplies as nitrogen source. Some strains of *Salmonella* and *Shigella* species do not grow in presence of eosin and methylene blue. Inoculated plates should be protected from light. Further tests are required to confirm the isolates.

Methodology

Suspend 22.5 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to dissolve the medium completely. Dispense in test tube 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.

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

Quality Control

Physical Appearance

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

Colour and Clarity of prepared medium

Reddish-purple coloured, opalescent solution with greenish cast.

Reaction

Reaction of 2.25% w/v aqueous solution is pH 7.2 ± 0.2 at 25°C.

pH Range

7.0-7.4

Cultural Response/Characteristics

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

Organisms (ATCC)	Inoculum (CFU)	Growth
Escherichia coli (25922)	10^3-10^4	luxuriant
Proteus mirabilis (25933)	10^3-10^4	luxuriant
Salmonella serotype Typhimurium (14028)	10^3-10^4	luxuriant
Enterobacter aerogenes (13048)	10^3-10^4	good
Klebsiella pneumonia(13883)	10^3-10^4	good
Staphylococcus aureus (25923)	10^4-10^5	inhibited

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 day.

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 :

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