Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Fermentation MiVeg Medium for Neisseriae

Product Code : VM1825

Application:- This medium is recommended for studying fermentation reaction of fastidious organisms such as *Neisseriae* species.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	20.0
Cystine	0.5
Sodium chloride	5.0
Sodium sulphite	0.5
Phenol red	0.017
Agar	3.5
Final pH (at 25°C)	7.5 ± 0.1

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

This medium is prepared by replacing animal based peptones with vegetable peptones thus making the medium free from BSE/TSE risks. Fermentation MiVeg Medium for Neisseriae is the MiVeg modification of Fermentation Medium for Neisseriae recommended for studying fermentations of fastidious microorganisms such as *Neisseriae*. This medium produces rapid results of acid production from sugars like dextrose, fructose, lactose, maltose, sucrose etc. In case of *Neisseriae gonorrhoeae*, it has been shown that it metabolizes dextrose aerobically by a combination of Entner-Doudoroff and Pentose Phosphate pathways (1). *Neisseriae gonorrhoeae* yields acetic acid and little lactic acid upon utilization of dextrose sugar. On prolonged incubation (72 hours or longer), the peptone in the medium is deaminted enzymatically to amino acids. These products combined with acetic acid. Oxidation after the depletion of glucose produce alkaline byproducts that tend to neutralize the acid produced and may cause glucose test medium to revert from an acid to alkaline reaction (false negative) (3). Cysteine acts as an amino acid source as well as a reducing agent which can remove (bind) molecular oxygen thereby preventing the accumulation of peroxides which are lethal to certain microorganisms (2). Small amount of agar in the medium reduces convection currents in the medium and hence contributes to maintain anaerobic conditions in the depth of the tubes. MiVeg hydrolysate supplies the necessary nitrogenous nutrients to the test organisms while sodium chloride maintains the osmotic equilibrium in the medium. Phenol red is the pH indicator which turns yellow at acidic pH. Observe the inoculated tubes after every 4 hours.

Methodology

Suspend 29.51 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Dispense and sterilize by autoclaving at 12 lbs pressure (118°C) for 15 minutes. The pressure should not exceed 12 lbs. Cool to around 40-45°C and add membrane filter-sterilized sugar solutions to final concentration of 1%. (i.e. 5 ml of 20% Sugar solution per 100 ml of medium).

Quality Control

Physical Appearance

Beige coloured, homogeneous, free flowing powder.

Gelling

Semisolid, comparable with 0.35% Agar gel.

Colour and Clarity of prepared medium

Straw coloured, clear to slightly opalescent semisolid gel forms in tubes as butts.

Reaction

Reaction of 2.95% w/v aqueous solution is pH 7.5 ± 0.1 at 25°C.

pH Range

7.4-7.6

Cultural Response/Characteristics

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

Organisms (ATCC)	Inoculum (CFU)	Growth	Acid*	Motility
Escherichia coli (25922)	10^2-10^3	luxuriant	+	+
Neisseria gonorrhea (19424)	10^2-10^3	luxuriant	+	-
Streptococcus pneumoniae (6303)	10^2-10^3	luxuriant	+	-

Key : * = Acid in presence of added dextrose
+ = positive reaction

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. Morse, Stein and Hines, 1974, J. Bact., 120:702.
2. MacFaddin J.F., 1985 (ed), Media For Isolation-Cultivation-Identification Maintenance of Medical Bacteria. Vol I, Williams and Wilkins, Baltimore.
3. Murray PR, Baron, Pfaller, and Yolken (Eds). 2003. In Manual of Chemical Microbiology 8th ed, ASM, Washington, DC.

Disclaimer :

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