Technical Information

SIM MiVeg Medium

Product Code : VM1181

Application:- SIM MiVeg Medium is recommended for determination of hydrogen sulphide production, indole formation and motility of enteric bacilli.

Composition

Ingredients	Gms / Litre
MiVeg peptone	30.0
MiVeg extract	3.0
MiVeg peptonized iron	0.2
Sodium thiosulphate	0.025
Agar	3.0
Final pH (at 25°C)	7.3 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

SIM MiVeg Medium is prepared by adding vegetable peptones like MiVeg peptone, MiVeg extract and MiVeg peptonized iron in place of Peptic digest of animal tissue, Beef extract and Peptionzed iron respectively thereby making the medium free from BSE/TSE risks. SIM MiVeg Medium is the modification of animal based SIM Medium. This medium is used to differeniate enteric bacilli (*Salmonella and Shigella*) on the same principles as in SIM medium i.e. on the basis of sulphide production, indole formation and motility (1, 2). It is known that *Salmonella* serotype Paratyphi A and *Salmonella* serotype Paratyphi B can be differeniate based on of H_2S (hydrogen sulphide) production using lead acetate strips as reported by Jordan and Victorso (3). Medium with low agar helps to determine motility and indole production (4)

MiVeg peptonized iron and sodium thiosulphate are indicators of H_2S production. H_2S reacts with MiVeg peptonized iron to form black precipitate of ferrous sulphide. Motile organisms intensify the H_2S reaction. Motility of organisms can be studied visually, as motile organisms grows away from line, of stab inoculation whereas non-motile grows along the stab line. Tryptophan present in MiVeg peptone is degraded by specific bacteria to produce indole (2). Add 0.2 ml of Kovac's reagent after incubation and allow it to stand for 10 minutes. A pink to red coloured ring indicates a positive indole reaction.

Methodology

Suspend 36.23 grams of powder media in 1000 ml distilled water. Mix thoroughly and heat to boiling to dissolve the medium completely. Dispense in tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) fo 15 minutes. Cool the tubes in an upright position

Quality Control

Physical Appearance

Yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Gelling

Semisolid, comparable with 0.3% Agar gel.

Colour and Clarity of prepared medium

Medium amber coloured, slightly opalescent semisolid gel forms in tubes as butt.

Reaction

Reaction of 3.6% w/v aqueous solution is pH 7.3 ± 0.2 at 25°C.

pH Range
7.1-7.5

Cultural Response/Characteristics

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

Organisms (ATCC)	Inoculum (CFU)	Growth	H_2S	Motility	Indole
Escherichia coli (25922)	10^2- 2 x 10^2	luxuriant	-	+	+
Salmonella serotype Typhimurium (14028)	10^2- 2 x 10^2	luxuriant	+	+	-
Shigella flexneri (12022)	10^2- 2 x 10^2	luxuriant	-	-	-

Key : H_2S : + = blackening of the medium H_2S production
Indole : + = indole production (red ring)
Motility : + = growth away from stab line (motile).

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.

VM1181 SIM MiVeg Medium
1. Control
2. *Escherichia coli*
3. *Salmonella* serotype Typhimurium
4. *Shigella flexneri*

Further Reading

1. MacFaddin 1985, Media for Isolation-Cultivation-Identification-Maintenance Medical Bacteria Vol, I, Williams, & Wilkins, Baltimore, M.D .
2. Ewing, 1986, Edwards and Ewing's Identification of Enterobacteriaceae, 4thed., Elsevier Science Publishing Co., Inc. New York.
3. Jordan and Victorson, 1917, J. Inf. Dis., 21:554.
4. Sosa, 1943, Rev. Inst. Bact., 11:286.

Disclaimer :

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