Technical Information

Fluid Thioglycollate MiVeg Medium w/ MiVeg Extract

Product Code : VM1380

Application:- Fluid Thioglycollate MiVeg Medium with MiVeg Extract is used for sterility testing of biologicals and for cultivation of aerobic and anaerobic organisms.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	15.00
Yeast extract	5.00
MiVeg extract	5.00
Dextrose	5.50
Sodium chloride	2.50
L-Cystine	0.50
Sodium thioglycollate	0.50
Resazurin sodium	0.001
Agar	0.75
Final pH (at 25°C)	7.2 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Fluid Thioglycollate MiVeg medium is prepared by using MiVeg hydrolysate and MiVeg extract to avoid BSE/ TSE risks associated with animal origin peptone. This medium is the modification of medium devised by Brewer (by adding a reducing agent and small amount of agar) (1) for rapid cultivation of both aerobic as well as anaerobic microbes. AOAC recommended (2) this medium for sterility testing of antibiotics, biologicals, foods and for determining the phenol coefficient and sporicidal effect of disinfectants. However, it is intended for the examination of clear liquid or water-soluble materials. This medium is also used in the detection of viable bacteria in vaccines.

MiVeg hydrolysate, MiVeg extract, yeast extract and dextrose provide the growth factors necessary for bacterial multiplication. Sodium thioglycollate act as a reducing agent which neutralizes the toxic effects of mercurial preservatives and other heavy metals which exert a bacteriostatic effect on the materials under examination. L-Cystine is another reducing agent, present in the medium which inactivate heavy metal compounds and maintain low redox potential, thereby supporting anaerobes. By creating an environment with a low Eh, the reducing agents prevent the accumulation of peroxides which can be toxic to some organisms. Any increase in the oxygen content is indicated by a colour change of redox indicator, resazurin to red (3,4,5). Small amount of agar also helps in maintaining low redox potential for stabilizing the medium (6).

Methodology

Suspend 34.75 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 25°C and store in a cool dark place preferably below 25°C.

Note: If more than the upper one-third of the medium has acquired a pink colour, the medium may be restored once by heating in a water bath or in free flowing steam until the pink colour disappears.

Quality Control

Physical Appearance

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

Colour and Clarity of prepared medium

Light straw coloured, clear to very slightly opalescent solution with upper 10% or less medium pink on standing.

Reaction

Reaction of 3.47% 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,

I. Bacterial cultures at 30-35^{0}C for 48 – 72 hours.
II. Fungal cultures at 20 – 25^{0}C for 2 – 7 days.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
Bacillus subtilis (6633)	10-100	luxuriant	>70%
Candida albicans (10231)	10-100	luxuriant	>70%
Clostridium sporogenes (11437)	10-100	luxuriant	>70%
Micrococcus luteus (9341)	10-100	luxuriant	>70%
Neisseria meningitidis (13090)	10-100	luxuriant	>70%
Streptococcus pyogenes (19615)	10-100	luxuriant	>70%
Bacteroides vulgatus (8482)	10-100	fair-good	>50%

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. Brewer, 1940, J. Am. Med. Assoc., 115:598.
2. Williams (Ed.), 2005, Official methods of Analysis of AOAC, 18th ed. AOAC, Washington D.C.
3. Marshall, Gunnison and Luxen, 1940, Proc. Soc. Exp. Biol. Med., 43:672
4. Nungester, Hood and Warren, 1943, Proc. Soc. Exp. Biol. Med., 52:287.
5. Portwood, 1944, J. Bact., 48:255.
6. MacFaddin J.F., 1985 (ed), Media for Isolation-Cultivation-Identification ofMedical Bacteria. Vol 1. Williams and Wilkins, Baltimore.

Disclaimer :

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