Technical Information

Fluid Selenite Cystine MiVeg Medium (Twin pack)
(Selenite Cystine MiVeg Medium)

Product Code :VM1025

Application:- Fluid Selenite Cystine MiVeg Medium (Twin pack) is used as an enrichment medium for the isolation of *Salmonellae* in foods, dairy products, materials of sanitary importance and clinical specimens.

Composition

Ingredients	Gms / Litre
Part A:	
MiVeg hydrolysate	5.00
Lactose	4.00
Disodium phosphate	10.00
L-Cystine	0.01
Part B:	
Sodium hydrogen selenite	4.00
Final pH (at 25°C)	7.0 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Fluid Selenite Cystine MiVeg Medium is prepared by adding MiVeg hydrolysate in place of Casein enzymic hydrolysate thus making the medium free from BSE/TSE risks. Selective inhibitory effects of selenite were first demonstrated by Klett (1). Guth (2) used it to isolate *Salmonella* serotype Typhi. Leifson found that selenite inhibits *Streptococci* and coliforms, thereby allowing multiplication of *Salmonella* without identification of other intestinal flora (3). Fluid Selenite Cystine MiVeg Medium is a modification of Leifson formula with added cystine (4). This medium is equivalent to the formulation recommended by the AOAC (5) for the detection of *Salmonellae* in foodstuff, particularly egg products. Selenite Cystine MiVeg Broth is useful for detecting *Salmonella* during nonacute stages of illness when organisms occur in the faeces in low numbers and for epidemiological studies to enhance the detection of low numbers of organisms from asymptomatic or convalescent patients (6).ssss
MiVeg hydrolysate supplies essential nutrients for the growth of test organism. Lactose is the fermentable carbohydrate. Sodium hydrogen selenite inhibits gram positive bacteria and most gram negative bacteria except *Salmonella*. Phosphate maintains a stable pH and also lessens the toxicity of selenite. L-Cystine is a reducing agent improving the recovery of *Salmonellae*. Enriched broth is subcultured onto solid medium. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite reduces after 6 - 12 hours of incubation (7).

Methodology

Suspend 4.0 grams of Part B in 1000 ml distilled water. Add 19.01 grams of Part A. Mix well and heat to dissolve the medium completely. Dispense in sterile test tubes. Sterilize in a boiling water bath or free flowing steam for 10 minutes. DO NOT AUTOCLAVE. Excessive heating is detrimental. Discard the prepared medium if large amount of selenite is reduced (indicated by red precipitate at the bottom of tube / bottle).

CAUTION: Sodium Hydrogen Selenite (Sodium bi-selenite) is very toxic, corrosive agent and causes teratogenicity. Handle with great care. If there is contact with skin wash immediately with lot of water.

Quality Control

Physical Appearance

Part A: Cream coloured, may have slightly greenish tinge, homogeneous, free flowing powder.
Part B : White crystalline powder.

Colour and Clarity of prepared medium

Cream coloured, clear to very slightly opalescent solution of complete medium.

Reaction

Reaction of medium [1.9% w/v of Part A and 0.4% w/v of Part B] is pH 7.0 ± 0.2 at 25°C.

pH Range

6.8-7.2

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18 – 24 hours, when subcultured on MacConkey Miveg agar (VM1081).

Organisms (ATCC)	Growth	Recovery
Escherichia coli (25922)	little-none*	pink
Salmonella serotype Choleraesuis (12011)	luxuriant	colourless
Salmonella serotype Enteritidis (13076)	luxuriant	colourless
Salmonella serotype Typhi (6539)	luxuriant	colourless
Salmonella serotype Typhimurium (14028)	luxuriant	colourless

Key : *= no increase in number

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. Klett A., 1900, Zeitsch Fer Hyg. Und. Infekt, 33:137.
2. Guth F., 1916, Zbl. Bakt. I. Orig., 77:487.
3. Leifson E., 1936, Am. J. Hyg., 24(2):423.
4. North W.R. and Bartram M.T., 1953, Appl. Microbiol., 1:130.
5. AOAC, 1978, Bacteriological Analytical Manual, 5th ed., AOAC, Washington, DC.
6. Murray PR, Baron, Pfaller and Yolken 2003, Manual of Clinical Microbiology, 8th ed., ASM, Washington, D.C.
7. Chattopadhyay W. and Pilford J. N., 1976, Med.Lab. Sci., 33:191.

Disclaimer :

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