

## Fluid Selenite Cystine HiVeg™ Medium (Twin pack) (Selenite Cystine HiVeg™ Medium)

MV025

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

### Composition \*\* :

Ingredients	Grams/Litre
<b>Part A:</b>	
HiVeg hydrolysate	5.00
Lactose	4.00
Disodium phosphate	10.00
L-Cystine	0.01
<b>Part B:</b>	
Sodium hydrogen selenite	4.00

Final pH (at 25°C ) 7.0 ± 0.2

\*\* Formula adjusted, standardized to suit performance parameters.

### Directions :

Suspend 4.0 grams of Part B in 1000 ml distilled water. Add 19.01 grams of Part A. Mix well. Warm to dissolve the medium completely. Distribute 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.

### Principle and Interpretation :

This medium is prepared by using HiVeg hydrolysate in place of Casein enzymic hydrolysate which makes 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 inhibited feed *Streptococci* and coliforms, thereby allowing multiplication of *Salmonella* without identification from other intestinal flora(3). North and Baitiam modified Leifson selenite broth by adding cystine, which stimulated growth of *Salmonella* (4). Fluid Selenite Cystine HiVeg Medium is a modification of this medium. This medium is equivalent to the formulation recommended by the AOAC (5) for the detection of *Salmonellae* in foodstuff, particularly egg products. Selenite Cystine HiVeg Broth is useful for detecting *Salmonella* in the 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).

Fluid Selenite Cystine HiVeg Medium contains HiVeg hydrolysate as a source of nitrogen, carbon, vitamins and minerals. Lactose is the fermentable carbohydrate. Sodium acid 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 and improves recovery of *Salmonellae*. Enriched broth is subcultured on solid medium. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite reduces after 6 - 12 hours of incubation (7).

### Product Profile :

Vegetable based (Code MV)Ⓞ	Animal based (Code M)
<b>MV025</b> HiVeg hydrolysate	<b>M025</b> Casein enzymic hydrolysate
<b>Recommended for</b>	: Isolation of <i>Salmonellae</i> from foods, dairy products, materials of sanitary importance and clinical specimens.
<b>Reconstitution</b>	: 19.01 g/l (Part A) + 4.0 g/l (Part B)
<b>Quantity on preparation (500g):</b>	21.72 L (A+B)
<b>(100g):</b>	4.34 L (A+B)
<b>pH (25°C)</b>	: 7.0 ± 0.2
<b>Supplement</b>	: None
<b>Sterilization</b>	: Boiling (DO NOT AUTOCLAVE)
<b>Storage</b>	: Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

### Quality Control :

#### Appearance of powder

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

Part B : White crystalline powder.

#### Colour and Clarity

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.

#### Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours, when subcultured on MacConkey HiVeg Agar (MV081).

Organisms (ATCC)	Colour of Colony	Recovery
<i>Escherichia coli</i> (25922)	little-none*	pink
<i>Salmonella</i> serotype Choleraesuis (12011)	luxuriant	colourless
<i>Salmonella</i> serotype Enteritidis (13076)	luxuriant	colourless
<i>Salmonella</i> serotype Typhi (6539)	luxuriant	colourless
<i>Salmonella</i> serotype Typhimurium (14028)	luxuriant	colourless

Key : \* = no increase in number

### References :

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