Selenite Cystine Broth Base without Biselenite

Intended Use
Selenite Cystine Broth Base without Biselenite is recommended as a selective enrichment media for *Salmonella* and possibly *Shigella sonnei* from faeces, urine, water and foodstuffs.

Summary
Klett first demonstrated the selective inhibitory effects of selenite and Guth used it to isolate *Salmonella Typhi*. Leifson fully investigated selenite and formulated the media. Selenite Cystine Medium is a modification of Leifsons formula with added cystine. Modification of original composition and similar medias are recommended by AOAC, APHA, USP etc. Enrichment media are routinely employed for detection of pathogens in faecal specimens as the pathogens are present in a very small number in the intestinal flora. Selenite Cystine 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 number of organisms from asymptomatic or convalescent patients.

Principle
Casein enzymic hydrolysate provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other essential nutrients. Sodium phosphate maintains a stable pH and also lessens the toxicity of selenite. L-cystine improves recovery of *Salmonella*.

Formula*
Ingredients	**g/L**
Casein Enzymic Hydrolysate	5.0
Lactose	4.0
Disodium Phosphate	10.0
L-Cystine	0.01
Final pH (at 25°C)	7.0 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30ºC in tightly closed container and the prepared medium at 2ºC-8ºC. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen
Clinical samples - Faeces, Urine; Water samples; Food samples.

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 19.01 g of the powder in 1000 mL purified / distilled water.
2. Warm to dissolve the powder completely.
3. Distribute in sterile test tubes.
4. Sterile in a boiling water bath or free flowing steam for 10 minutes. DO NOT AUTOCLAVE.

Quality Control

Dehydrated Appearance: Cream to yellow coloured, homogeneous, free flowing powder.
Prepared Appearance: Light yellow coloured, clear to very slightly opalescent solution, without precipitate.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is observed after an incubation at 30°C-35°C for 18-24 hours. Sub-culturing is carried out using MacConkey agar after enrichment in Selenite Cystine Broth Base without Biselenite at 30°C-35°C for 18-72 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 18 hours.

Organism (ATCC)	**Growth**
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good
Salmonella enterica subsp. *enterica* serovar *Choleraesius* (12011)	Good
Escherichia coli (25922)	Partial Inhibition

Note: Inoculum cfu for good growth is 10 – 100.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Klett A., 1900, Zeitsch Für Hyg. Und. Infekt., 33: 137.
2. Guth F., 1926, Zbl. Bakt. I. Orig., 77:487.
3. Leifson E., 1936, Am. J. Hyg., 24(2): 423.
4. North W.R. and Bartran M.T., 1953, Appl. Microbiol., 1:130.
5. AOAC, 1978, Bacteriological Analytic Manual, 5th ed., AOAC, Washington, DC
6. Downes F. P. and Ito K. (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
7. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
8. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	**Product description**	**Pack Size**
201190150500	Dehydrated Culture Media	500 g
201190152500	Dehydrated Culture Media	2.5 k
201190155000	Dehydrated Culture Media	5 k