Selenite F Broth (Twin Pack)

Intended Use
Selenite F Broth is used as an enrichment medium for the isolation of *Salmonella* species from faeces, urine, water, foods and other materials of sanitary importance.

Summary
Selenite F Broth is based on the formulation devised by Leifson, who showed that selenite was beneficial in the isolation of *Salmonella* species while inhibiting coliforms and certain other microbial species like faecal streptococci, present in faecal specimens. An enrichment medium is routinely employed to detect pathogens in faecal specimens since the pathogens are generally present in a very small number compared to the intestinal flora. This medium is useful in detecting *Salmonella* in the non-acute stages of illness when the organisms occur in faeces in low numbers and for epidemiological studies to enhance the detection of low numbers of organisms from asymptomatic or convalescent patients. Selenite F broth is used in the recovery of *Salmonella* with subcultures being made after 12-18 hours of incubation.

Principle
Tryptone provides nitrogenous substances and other amino acids. Lactose maintains the pH in the medium as selenite is reduced by bacterial growth and alkali is produced. An increase in pH lessens the toxicity of selenite and results in the overgrowth of other bacteria. The acid produced by bacteria due to lactose fermentation helps to maintain a neutral pH. Sodium phosphate buffers the medium to maintain the pH and also lessens the toxicity of selenite, thus increasing the capacity of the medium. Sodium selenite inhibits Gram-positive bacteria and suppresses the growth of most Gram-negative bacteria and Enterococci other than *Salmonella*.

Formula*

Ingredients	**g/L**
Part A	
Tryptone	5.0
Lactose	4.0
Sodium Phosphate	10.0
Part B	
Sodium Hydrogen Selenite	4.0
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 – Urine, Faeces; Food and Dairy samples; Water 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 Part A-19.00 g and Part B-4.00 g of the powder in 1000 mL purified / distilled water and mix thoroughly.
2. Boil with frequent agitation to dissolve the powder completely.
3. Sterilize in boiling water bath or free flowing steam for 10 minutes. AVOID OVERHEATING. DO NOT AUTOCLAVE. Excessive heating is detrimental.
4. Discard the prepared medium if a large amount of selenite is reduced, which is indicated by a red precipitate at the bottom of the tube/bottle.

Quality Control

Dehydrated Appearance: Part A: White to light yellow coloured, homogeneous free flowing powder.
Part B: White to cream crystalline powder.
Prepared Appearance: Light yellow to orange coloured, clear to very slightly opalescent solution, may have a slight precipitate.
Cultural Response: Cultural characteristics observed after an incubation of 18-24 hours at 30°C-35°C and subsequently subculture on MacConkey Agar.

Organism (ATCC)	Growth	Colour of Colony
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	Colourless
Salmonella enterica subsp. *enterica* serovar *Choleraesius* (12011)	Good	Colourless
Escherichia coli (25922)	Partial Inhibition	Pink with bile precipitate
Salmonella serotype Typhi (NCTC 786)	Good	Colourless

Interpretation of Results

1. After incubation, there must be an increase in the number of pathogens that the medium is designed to select for and enrich.
2. Sub-culture onto any combination of greater and lesser inhibitory, selective and differential media for *Enterobacteriaceae*. e.g. MacConkey Agar, XLD Agar, etc. to isolate pathogens for identification.

Performance and Evaluation

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

1. Directions
2. Storage
3. Expiry

Precautions / Limitations

1. Discard the prepared medium if large amounts of reduced selenite can be seen as a red precipitate at the bottom of the tube.
2. Do not incubate for longer than 24 hours because the inhibitory effect of selenite is reduced after 6-12 hours incubation and coliforms may overgrow the pathogens.
3. Take subcultures from the upper third of the broth column which should be at least 5 cm in depth.
4. Enrichment broths should not be used as the sole isolation medium.
5. Use in conjunction with selective and non-selective plating media to increase the chances of isolating pathogens, particularly when they may be present in small numbers.

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. Leifson E; 1936, Am. J. Hyg; 24(2): 423.
2. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201190140100	Dehydrated Culture Media	100 g
201190140500	Dehydrated Culture Media	500 g
203190530010	Ready prepared Tube	25 X 10 mL