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Selenite F Broth

Selective enrichment medium for the isolation of *Salmonellae* and some *Shigella* from faeces, urine, and other pathological specimens.

REF: BS.1/SF01.100.0100	100 Gram	REF: BS.1/SF01.250.0250	250 Gram
REF: BS.1/SF01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Selenite F broth is used as an enrichment medium for the isolation of *Salmonella* and *Shigella* from stool, urine, water, and food products. It is the most widely used enrichment medium to isolate *Salmonella Typhi* from fecal specimen of suspected patients. Selenite F Broth was formulated by Leifson, who showed that selenite was inhibitory for coliforms and certain other microbial species, such as fecal streptococci, present in fecal specimens and, therefore, was useful in the recovery of *Salmonella* species

METHOD PRINCIPLE

Tryptone provides nitrogenous substances, amino acids and vitamins. Lactose is a carbohydrate source which maintains the pH of medium. Selenite is reduced by bacterial growth and alkali is produced. An increase in pH reduces the toxicity of the selenite and results in overgrowth of other bacteria. The acid produced by bacteria due to lactose fermentation helps in maintaining a neutral pH. Sodium phosphate maintains a stable pH and reduces the toxicity of selenite. Sodium selenite inhibits many species of gram-positive and gram-negative bacteria including enterococci and coliforms.
Sodium hydrogen selenite (Sodium biselenite) is very toxic, corrosive agent and causes teratogenicity, handle with care.

MEDIA COMPOSITION

Item	Formula per liter of medium
Tryptone	5 gm
Lactose	4 gm
Dipotassium hydrogen phosphate	3.5 gm
Potassium dihydrogen phosphate	6.5 gm
Sodium selenite	4 gm

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the Selenite F Broth material safety data sheet.

STORAGE AND STABILITY

BioScien Selenite F Broth should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH 7.0 ± 0.2 at 25°C

PREPARATION

Dissolve 23 grams in 1 liter of distilled water. Warm to dissolve the medium completely. Distribute in sterile test tubes. Sterilize in a boiling water bath or free flowing steam for 10 minutes. Discard the prepared medium if large quantities of selenite are reduced (shown by red precipitate at the bottom of tube/bottle). DO NOT AUTOCLAVE.

Deterioration

The color of ***BioScien*** Selenite F Broth is white to yellow homogeneous free flowing powder. Prepared Media is cream to yellow in color. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

-Clinical samples (e.g. Feces, urine or other pathological specimens).

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile test tubes
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after incubation at 35-37°C for 18-24H, then sub-cultured on MacConkey Agar, incubated and examined after 18-24 hours.

Microorganism	Recovery	Colony color on MacConkey Agar
Salmonella Typhi ATCC 6539	Luxuriant growth	Colorless
Salmonella Typhimurium ATCC 14028	Luxuriant growth	Colorless
Shigella sonnei ATCC 25931	Luxuriant growth	Colorless
Escherichia coli ATCC 25922	None to poor	Pink with bile precipitate
Enterococcus faecalis ATCC 29212	None to poor	Pink with bile precipitate

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

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2. Leifson, E. 1939. New selenite selective enrichment medium for the isolation of typhoid and paratyphoid bacilli. Am. J. Hyg. 24:423-43
3. Hartman, P. A., and S. A. Minnich. 1981. Automation for rapid identification of salmonellae in foods. J. Food Prot. 44:385-386.
4. Kelly, Brenner and Farmer, 2003, Manual of Clinical Microbiology, 8th ed.,,, Lennett and others (Eds.), ASM, Washington, D.C.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

SYMBOLS IN PRODUCT LABELLING	
IVD — For in-vitro diagnostic use	Σ — Number of <n> test in the pack
LOT — Batch Code/Lot number	Caution
REF — Catalogue Number	Do not use if package is damaged
Temperature Limitation	Consult Instruction for use
Expiration Date	
Manufactured by	