ARENA BioScien

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Selenite broth base

Selenite Broth Base w/o selenite is recommended for the enrichment of *Salmonellae* species from food, dairy products and pathological specimens, on addition of selenite.

REF: BS.1/SE01.100.0100	100 Gram	REF: BS.1/SE01.250.0250	250 Gram
REF: BS.1/SE01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Klett (1) first demonstrated the selective inhibitory effects of selenite and Guth (2) used it to isolate *Salmonella Typhi*. Leifson fully investigated selenite and formulated the selenite media. 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 Broth is useful for detecting *Salmonella* in the non-acute 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 (3).

METHOD PRINCIPLE

Tryptone provides nitrogenous substances. Lactose maintains the pH of medium. Selenite is reduced by bacterial growth and alkali is produced. An increase in pH lessens the toxicity of the selenite and results in overgrowth of other bacteria. The acid produced by bacteria due to lactose fermentation serves to maintain a neutral pH. Sodium phosphate maintains a stable pH and also lessens the toxicity of selenite. Enriched broth is subcultured on differential plating media such as Bismuth Sulphite Agar, Brilliant Green Agar, and XLD Agar etc. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite decreases after 6 - 12 hours of incubation (4)

MEDIA COMPOSITION

Item	Formula per liter of medium
Part A - Skim milk powder	 133.33 gm.
Part B - Peptic digest of animal tissue - Sodium chloride - Yeast extract - Cetrimide - Agar	 3.330 gm. 1.670 gm. 1.000 gm. 0.400 gm. 20.000 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 Selenite broth base material safety data sheet.

STORAGE AND STABILITY

BioScien Selenite broth base dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored 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

MEDIA PREPARATION

- Suspend 4 grams of sodium hydrogen selenite in 1000 ml distilled water.
- Adjust pH to *7.0 ± 0.2 at 25°C*
- Add 19 grams of selenite broth base. 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)

Deterioration

The color of ***BioScien*** Selenite broth base is Cream to light yellow homogeneous free flowing powder. If there are any physical changes, discard the medium.
The hydrated medium is Cream to yellow coloured clear solution without any precipitate, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION

Clinical samples - Blood; Food and dairy samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile test tubes
- Sterile loops
- Incubator

PERFORMANCE CHARACTERISTICS

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Test Organisms	Growth	Colony color
Escherichia coli ATCC 25922 (00013)*	None to poor	pink with bile precipitate
Salmonella Choleraesuis ATCC 12011	Good –luxuriant	Colorless
Salmonella Typhi ATCC 6539	Good –luxuriant	Colorless
Salmonella Typhimurium ATCC 14028 (00031)*	Good –luxuriant	Colorless

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

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2. Guth F., 1926, Zbl. Bakt. I. Orig., 77:487.
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5.Isenberg, H.D. Clinical Microbiology Procedures Handb0ook. 2 nd 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.
7. Lapage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.
8. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C. Key : *Corresponding WDCM numbers.
9. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
10. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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	