SELENITE BROTH (7155)

Intended Use
Selenite Broth is used for the selective enrichment of *Salmonella* spp.

Product Summary and Explanation
Selenite Broth was originated by Leifson,[1] while observing good recovery of *Salmonella* spp. and reduced growth of fecal coliforms. Selenite Broth is used as a selective enrichment for the cultivation of *Salmonella* spp. that may be present in small numbers and competing with intestinal flora. *Salmonella* organisms are also injured in food-processing procedures, including exposure to low temperatures, sub-marginal heat, drying, radiation, preservatives or sanitizers.[2] Although injured cells may not form colonies on selective media, they cause infection if ingested.[3] *Salmonella* spp. cause many types of infections, from mild self-limiting gastroenteritis to life-threatening typhoid fever.[4]

Selenite Broth conforms with the American Public Health Association (APHA),[5] and is specified for clinical applications.[4,6] Many modifications of Selenite Broth exist, including Selenite Cystine Broth, from the original formula described as Selenite F Broth by Leifson.[1]

Principles of the Procedure
Enzymatic Digest of Casein and Enzymatic Digest of Animal Tissue are the nitrogen and vitamin sources in Selenite Broth. Lactose is the fermentable carbohydrate. Sodium Phosphate is the buffer. A rise in pH decreases selective activity of Selenite. The acid produced by lactose fermentation helps to maintain a neutral pH. Sodium Selenite inhibits the growth of Gram-positive bacteria and many Gram-negative bacteria.

Formula/Liter
Enzymatic Digest of Casein ..... 2.5 g
Enzymatic Digest of Animal Tissue..... 2.5 g
Lactose ..... 4 g
Sodium Phosphate..... 10 g
Sodium Selenite..... 4 g
Final pH: 7.0 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions
1. For Laboratory Use.
2. Harmful. Harmful by inhalation and if swallowed. Irritating to respiratory system.

Directions
1. Dissolve 23 g of the medium in one liter of purified water.
2. Heat to boiling. Avoid overheating.
3. **DO NOT AUTOCLAVE**.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and off-white.

Prepared Appearance: Prepared medium is clear, with no to light precipitate and very pale yellow.

Expected Cultural Response: Cultural response after aerobic incubation for 18 – 24 hours at 35 ± 2°C.

Microorganism	Approx. Inoculum (CFU)	Expected Results
Escherichia coli ATCC® 11775	10^3	Marked to complete inhibition
Salmonella typhi ATCC® 19430	10 - 300	Growth
Salmonella typhimurium ATCC® 14028	10 - 300	Growth
Shigella sonnei ATCC® 25931	10 - 300	Growth

The organisms listed are the minimum that should be performed for quality control testing.

Test Procedure
For a complete discussion on the isolation and identification of *Salmonella* spp., refer to appropriate references.

Results
Refer to references for the characteristic growth of *Salmonella* spp.

Storage
Store dehydrated medium at 2 - 30°C. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration
Refer to expiration date stamped on container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure
Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

Selenite Broth	**Code No.**	**7155A**	**500 g**
		7155B	**2 kg**
		7155C	**10 kg**

References

1. **Leifson, E.** 1939. New selenite selective enrichment medium for the isolation of typhoid and paratyphoid bacilli. Am. J. Hyg. **24:**423-432.
2. **Hartman, P. A., and S. A. Minnich.** 1981. Automation for rapid identification of salmonellae in foods. J. Food Prot. **44:**385-386.
3. **Sorrells, K. M., M. L. Speck, and J. A. Warren.** 1970. Pathogenicity of *Salmonella gallinarum* after metabolic injury by freezing. Appl. Microbiol. **19:**39-43.
4. **Murray, P. R. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.).** 1995. Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
5. **Vanderzant, C., and D.F. Splittstoesser (eds.).** Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.
6. **Isenberg, H. (ed.).** 1992. Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.

Technical Information
Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.

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