



## Selenite Broth

Medium for selective enrichment of *Salmonella* spp.,  
according to APHA.

### INTENDED PURPOSE

Selenite Broth is a liquid culture medium used for selective enrichment of *Salmonella* spp. and some species of *Shigella* from different samples.

### DESCRIPTION

Selenite Broth is based on early works by Klett and Guth who demonstrated the selective inhibitory effects of selenite and used it for the culture of typhoid organisms. Twenty years later, Leifson utilized this information to fully investigate selenite activity, to formulate the liquid medium selenite broth and to promote its wide use as an enrichment medium for the selective isolation of *Salmonella* spp. and some species of *Shigella*.

This medium is prepared according to the original formula described as Selenite F Broth by Leifson and recommended by the American Public Health Association for the examination of food.

### TYPICAL FORMULA\*

(g/l)

Enzymatic Digest of Casein	5.0
Lactose	4.0
Sodium Phosphate	10.0
Sodium Selenite	4.0
Final pH 7.0 ± 0.2 at 25°C	

\*Adjusted and/or supplemented as required to meet performance specifications.  
Grams per liter of purified water

### METHOD PRINCIPLE

Enzymatic digest of casein provides amino acids, nitrogen, carbon, vitamins and minerals for organisms growth. Lactose is the fermentable carbohydrate. Sodium phosphate is the buffer. Sodium selenite is the selective agent inhibiting many species of Gram-positive and Gram-negative bacteria including enterococci and coliforms.

### MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as: inoculating loops, sterile cotton swabs, physiological solution, incubator, quality control organisms.

### TEST PROCEDURE

Inoculate the sample or material to be tested into the medium.

Incubate at 35 ± 2°C for 12-24 hours (coliforms may overgrow the pathogens if incubated for longer than 24 h).

### INTERPRETING RESULTS

Turbidity indicates microbial growth.

Subculture to a selective and differential enteric plated medium, such as XLD Agar, Hektoen Enteric Agar ( ) or MacConkey Agar, streaking for isolation. Examine for typical colony morphology. Confirm with further biochemical tests.

### STORAGE

Store at 2-8 °C away from light. Do not use the product beyond its expiry date on the label or if product shows any evidence of contamination or any sign of deterioration.

### SHELF LIFE

1 year.

## QUALITY CONTROL

**Appearance of medium:** Clear, very pale yellow

**Expected Cultural Response:**

Control strains	Incubation	Incubation	Specification
<i>Salmonella</i> Typhimurium ATCC® 14028	≤ 100 CFU	18-24 h / 35 ± 2 °C	Good growth
<i>Shigella sonnei</i> ATCC® 25931			
<i>Escherichia coli</i> ATCC® 25922	>10 <sup>3</sup> CFU		Partial to complete inhibition

Please refer to the actual batch related Certificate of Analysis (CoA).

## PERFORMANCE CHARACTERISTICS

Performance testing of Selenite Broth was carried out using the QC strains listed above. The results obtained met the established criteria.

## LIMITATIONS

Invalid results can be caused by poor sample quality, improper sample collection, improper transportation, improper laboratory processing, or a limitation of the testing technology. The operator should understand the principles of the procedures, including its performance limitations, in advance of operation to avoid potential mistakes.

Growth depends on the requirements of each individual microorganism. It is therefore possible that certain strains which have specific requirements (substrate, temperature, incubation conditions, etc.) may not develop.

## WARNING AND PRECAUTIONS

**For professional use only.** Operators must be trained and have certain experience. Please read the instructions carefully before using this product. Reliability of assay results cannot be guaranteed if there are any deviations from the instructions in this document.

Consult the Safety Data Sheet (SDS) for information regarding hazards and safe handling practices.

## DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

## BIBLIOGRAPHY

See the references at the end of this document.

## TABLE OF SYMBOLS

See the table of symbols at the end of this document.

## ORDER INFORMATION

Product	Format	Packaging	Ref.
Selenite Broth	16x100mm Plastic Tube with screw cap and self-standing base	100 x 10 ml	26110P

## Revision History

Revision	Release Date	Change Summary
0	2024-10-22	Document creation

This IFU document and the SDS are available from the online Support Center:

[liofilchem.com/ifu-sds](https://liofilchem.com/ifu-sds)

## References

1. Versalovic, J., K.C. Carroll, G. Funke, J.H. Jorgensen, M.L. Landry, and D.W. Warnock (2011) Manual of Clinical Microbiology. 10th ed. ASM Press, Washington, D.C.
2. Quality Control for Commercially Prepared Microbiological Media (2004) - 3rd ed. M22-A3. Clinical and Laboratory Standards Institute - CLSI (NCCLS), Wayne, PA.
3. 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.
4. Leifson, E. (1939) New selenite selective enrichment medium for the isolation of typhoid and paratyphoid bacilli. Am. J. Hyg. 24:423-432.

## Table of Symbols

	Batch code
	Catalogue number
	Manufacturer
	Use by
	Fragile, handle with care
	Temperature limitation
	Contains sufficient for <n> tests
	Consult instructions for use
	Do not reuse
	Keep away from sunlight



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