

Selenite Broth, Selenite F Broth (i23167)

Selenite Broth (Selenite F Broth) is used as an enrichment medium for the isolation of *Salmonella* from feces, urine, water, foods and other materials of sanitary importance.

Industry: Food / Clinical

Principles & Uses

Selenite Broth, formulated based on Leifson's research, is a selective enrichment medium designed to detect *Salmonella*, particularly in low concentrations. Klett's work initially highlighted the selective inhibitory effects of selenite, later harnessed by Guth for *Salmonella Typhi* isolation. Peptone from casein, a nitrogen source, and lactose, functioning to stabilize the pH, are key components. Sodium selenite's inhibitory action against Gram-positive and most enteric Gram-negative bacteria, excluding *Salmonella*, is crucial. The medium, effective for epidemiological studies and non-acute illness stages, is especially useful in identifying pathogens in fecal specimens with low pathogen counts.

This medium design capitalizes on the reduction of selenite by bacterial growth, producing alkali that lessens selenite toxicity. The resulting increase in pH helps prevent overgrowth of other bacteria. Subculturing on differential media follows incubation for up to 24 hours. The selective inhibitory effect of selenite is most pronounced in the initial 6 - 12 hours, and pathogens like *Salmonella*, *Proteus*, and *Pseudomonas* remain unaffected.

Composition (gr/L)

Peptone from Casein 5 g, Lactose 4 g, Sodium Selenite 4 g, Dipotassium Hydrogen Phosphate 3.5 g, Potassium Dihydrogen Phosphate 6.5 g.

Final pH at 25°C 7.0 ± 0.2

Preparation from dehydrated Powder

Suspend 23 g / liter at room temperature. If the medium does not dissolve readily, heat briefly (max. 60 °C). If the medium is to be stored for a longer period of time filter-sterilize, dispense into suitable containers. DO NOT OVERHEAT THE MEDIUM.

Quality Control

Dehydrated Appearance: Off-white, free-flowing, homogeneous.

Prepared Appearance: Very light amber, clear to very slightly opalescent, may have a slight precipitate.

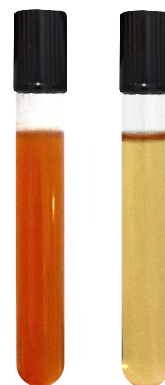
Reaction of 2.3% Solution at 25°C: pH 7.0 ± 0.2

Cultural Response

Inoculate and incubate at 35 ± 2°C for 18 - 24 hours. After incubation, subculture onto MacConkey Agar plates and incubate plated media at 35 ± 2°C for 18 -24 hours.

Organism (ATCC*)	Recovery	Colonies on MacConkey Agar
<i>Escherichia coli</i> (25922)	Partial to complete inhibition	Pink with bile precipitate
<i>Salmonella enterica</i> (14028)	Good	Colorless
<i>Shigella sonnei</i> (9290)	Fair to Good	Colorless

*ATCC is a registered trade mark of the American Type Culture Collection.



Salmonella typhimurium (left). Prepared Culture Media (right).

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.