

Selenite Cystine Broth (i23646)

For the enrichment of *Salmonellae* from faeces, foodstuffs and other materials.

Industry: Food / Clinical

Principles & Uses

Selenite Cystine Broth is a modified enriched medium designed for the selective enrichment of *Salmonella* spp, particularly in situations where the organisms are present in low numbers, such as in feces and various food products. Developed as a modification of Leifson's formula, it incorporates the amino acid cystine to establish a redox potential favorable for the enrichment and recovery of *Salmonella* and certain strains of *Shigella*.

Key components like Peptone from casein, lactose, sodium selenite, and L-cystine play crucial roles. Peptone from casein provides essential nitrogenous and carbonaceous compounds, while lactose helps maintain a neutral pH in the medium. Sodium selenite, known for its inhibitory effects on Gram-positive and most enteric Gram-negative bacteria, is pivotal in allowing *Salmonellae* to grow. L-Cystine serves a dual purpose by lowering the toxicity of sodium selenite and contributing additional organic sulfur.

The broth effectively inhibits early bacterial multiplication, enabling the selective growth of *Salmonella*.

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, L (-) Cystine 0.01 g.

Final pH at 25°C 7.0 ± 0.2

Preparation from dehydrated Powder

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

Quality Control

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

Prepared Appearance: Light amber, clear to slightly opalescent, may have a slight precipitate.

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

Cultural Response

Cultural response was observed after 24 ± 2 hours of incubation at 35 ± 2°C. 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.