



SBG Enrichment Broth (Twin Pack)

M1535

SBG Enrichment Broth is used for selective enrichment of *Salmonella* species from clinical specimens.

Composition**

Ingredients	Gms / Litre
Part A	-
Peptic digest of animal tissue	5.000
Yeast extract	5.000
Mannitol	5.000
Sodium taurocholate	1.000
Dipotassium phosphate	2.650
Monopotassium phosphate	1.020
Brilliant green	0.005
Part B	-
Sodium hydrogen selenite	4.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 4 grams of Part B in 1000 ml distilled water. Add 19.67 grams of Part A. Mix well. Heat to boiling for 5 to 10 minutes. DO NOT AUTOCLAVE OR OVERHEAT. Dispense in sterile tubes. Add 0.5 g/l sodium sulfapyridine if desired.

Caution: Sodium hydrogen selenite (Sodium biselenite) is very toxic, corrosive agent and causes teratogenicity. So it should be handled with great care. If there is contact with skin wash immediately with lot of water.

Principle And Interpretation

Salmonella are gram-negative, facultatively anaerobic, non-sporulating, motile rods in the family *Enterobacteriaceae*. They are widely distributed in animals affecting mainly the stomach and the intestines. These organisms are difficult to differentiate biochemically from *Escherichia coli*. Leifsons Selenite Medium (1) and Kauffmanns Modified Tetrathionate Medium have been widely used as enrichment medium for the isolation of *Salmonella*. Selenite Medium used for enrichment of *Salmonella* inhibits *E. coli* but allows growth of *Proteus* and *Enterobacter*. To overcome this difficulty, Stokes and Osborne developed a more selective medium by adding brilliant green and sodium taurocholate to the Selenite Medium and showed that it was superior to the Selenite Medium for isolating *Salmonella* in patients with gastroenteritis and similar diseases.

SBG (Selenite Brilliant Green) Enrichment Broth is prepared as per the formulation described by Stokes and Osborne (2) for selective enrichment of *Salmonella* from clinical specimens and egg products. Brilliant green and sodium selenite are neutralized by the egg constituents rendering the medium non-selective therefore sulfapyridine is added to the medium for isolation of *Salmonella* from eggs (3).

Peptic digest of animal tissue and yeast extract provide nitrogenous compounds, carbon, sulphur, vitamin B complex and trace elements necessary for the growth of organisms. Mannitol is the fermentable carbohydrate. Mannitol is utilized by *Salmonella* as an energy source, but it cannot be utilized by *Proteus*. Phosphates buffer the medium well. Brilliant green, sodium hydrogen selenite, sodium taurocholate inhibit the growth of gram-positive organisms and enteric organisms except *Salmonella* species. Whole egg and egg yolk reduces the selective properties of Selenite-Brilliant Green Enrichment. Addition of sulfapyridine restores the selective properties (3). This medium cannot be used for the isolation of *Salmonella Typhi*, *Salmonella Paratyphi A*, and *Salmonella Pullorum*.

1 gram or 1 ml of test material is inoculated in 10 ml of the medium and incubated at 35-37°C for 18-24 hours. Following incubation, a loopful of the enriched culture is streaked on SS Agar (M108), MacConkey Agar (M081) or other plates for the isolation of *Salmonella*.

Quality Control

Appearance

Part A : Cream to greenish yellow homogeneous free flowing powder Part B : White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium

Light green coloured clear to slightly opalescent solution

Reaction

Reaction of 1.97% w/v of Part A + 0.4% w/v of Part B at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

M1535: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours when subcultured on MacConkey Agar (M081).

Organism	Inoculum (CFU)	Growth (on M081)	Recovery (on M081)	Colour of colony (on M081)
Cultural Response				
<i>Salmonella Choleraesuis</i> ATCC 12011	50-100	luxuriant	≥50%	colourless
<i>Salmonella Typhi</i> ATCC 6539	50-100	luxuriant	≥50%	colourless
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	≥50%	colourless
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	none-poor	≤10%	pink to colourless
<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	≤10%	pink with bile precipitation

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. Leifson, 1955, Appl. Microbiol. 3:295
2. Stokes and Osborne, 1955, Appl. Microbiol., 3:217.
3. Osborne and Stokes, 1955, Appl. Microbiol., 3:295.

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