



Technical Data

Dulcitol Selenite Broth(Selenite-F Broth w/ Dulcitol) (Twin Pack) M1536

Intended Use

Recommended for selective enrichment of *Salmonella* species.

Composition**

Ingredients	g / L
Part A	-
Peptone	5.000
Dulcitol	4.000
Sodium phosphate	10.000
Part B	-
Sodium hydrogen selenite	4.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 4 grams of Part B in 1000 ml purified / distilled water. Add 19 grams of Part A. Mix well. Heat if necessary to dissolve the medium completely. Distribute in sterile test tubes. Sterilize in a boiling water bath or free flowing steam for 10 minutes. **DO NOT AUTOCLAVE OR OVERHEAT.** Excessive heating is detrimental.

Principle And Interpretation

Klett (1) first demonstrated the selective inhibitory effects of selenite and Guth (2) used this property to isolate *Salmonella* Typhi. Leifson (3) investigated the effects of selenite and formulated a media containing selenite. Dulcitol Selenite Broth is a modification of Leifson's Medium with Dulcitol replacing lactose. Selenium toxicity to certain microorganisms is not fully understood but it is suggested that it reacts with sulphur and sulphydral groups of critical cell components (4,5). Enrichment media are routinely employed for detection of pathogens in faecal specimens as the pathogens are present in a very small number in the intestinal flora. Dulcitol Selenite Broth is useful for detecting *Salmonella* from faeces, dairy products and other specimens.

Peptone provides nitrogenous substances. Sodium biselenite inhibits many species of gram-positive and gram-negative bacteria including Enterococci. Sodium phosphate maintains a stable pH and also lessens the toxicity of selenite. Dulcitol is typically fermented by *Salmonella* Choleraesuis subspecies Salamae, subspecies Gallinarum, subspecies Paratyphi A, subspecies Pullorum, subspecies Choleraesuis (6). Do not incubate the broth longer than 24 hours as the inhibitory effect of selenite decreases after 6-12 hours of incubation (7).

For routine purpose, selenite broth cultures should be incubated at 35°C for 18 to 24 hours and then subcultured on any combination of greater and lesser inhibitory selective agars.

Type of specimen

Clinical samples: Stool sample

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (8,9).

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Read the label before opening the container. Wear protective gloves/protective clothing/ eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Do not incubate the broth longer than 24 hours as the inhibitory effect of selenite decreases after 6-12 hours of incubation

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Part A : Cream to yellow homogeneous free flowing powder

Part B : White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured, clear solution without any precipitate

Reaction

Reaction of 1.9% w/v of Part A + 0.4% w/v of Part B at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

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

Organism	Inoculum (CFU)	Recovery (increase in numbers)	Colour of Colony
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	none to poor	pink with bile precipitate
<i>Salmonella</i> Enteritidis ATCC 13076 (00030*)	50-100	luxuriant	colourless
<i>Salmonella</i> Typhi ATCC 6539	50-100	good	colourless
<i>Salmonella</i> Typhimurium ATCC 14028 (00031*)	50-100	luxuriant	colourless

Key: (*) Corresponding WDCM numbers

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (8,9).

Reference

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5. Chattopadhyay W. & Pilford J. N., 1976, Med. Lab. Sci., 33:191.
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7. Weiss K. F., Ayers J. C., and Kraft A. A., 1965, J. Bacteriol., 90 : 857-862
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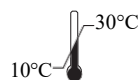
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