Sodium Biselenite Bud

DB001

Intended use

Bud containing Sodium Biselenite, wherein one bud is sufficient for 100 ml of medium .With addition in media, it is recommended for the selective enrichment of *Salmonella* species from food, dairy products and materials of sanitary importance and clinical specimens.

Directions

Direction for use

One bud is sufficient for 100 ml of medium for selective enrichment of *Salmonella* species.

Media	
M1536	Dulcitol Selenite Broth (Selenite-F Broth w/ Dulcitol) (Twin Pack)
M025	Fluid Selenite Cystine Medium (Selenite Cystine Broth) (Twin Pack)
GM025	Fluid Selenite Cystine Medium, Granulated (Selenite Cystine Broth, Granulated) (Twin Pack)
MV025	Fluid Selenite Cystine HiVeg™ Medium (Selenite Cystine HiVeg™ Broth) (Twin Pack)
MU025	Fluid Selenite Cystine Medium (Twin Pack)
MM025	Fluid Selenite Cystine Medium (Twin Pack)
M1533I	Fluid Selenite Cystine Broth (Twin Pack)
M1534	Mannitol Selenite Broth (Selenite Mannitol Broth) (Twin Pack)
M1537	Mannitol Selenite Broth w/ Brilliant Green (Twin Pack)
M052	Selenite Broth (Selenite F Broth) (Twin Pack)
GM052	Selenite Broth, Granulated (Selenite F Broth, Granulated) (Twin Pack)
MM052	Selenite F Broth (Twin Pack) Medium 11 (In accordance with IP 2007)
M025S	Selenite F Broth (Twin Pack)
M970	Selenite Broth Base w/o Biselenite
M1079	Selenite Cystine Broth Base w/o Biselenite

Directions for the media are followed as per the individual Technical data sheets. Instead of Part B , DB001 -Sodium Biselenite Bud (1 bud per 100 ml of the medium) can be added to the medium after boiling.

Principle And Interpretation

Selective inhibitory effects of selenite were first demonstrated by Klett (1). Guth (2) used it to isolate *Salmonella* Typhi. Leifson studied selenite and formulated a medium using selenite. Different formulation of Selenite Cystine Medium has been recommended by AOAC (5) for the detection of *Salmonella* in foodstuff, particularly egg products. It is also recommended by APHA (6, 7) ,USP (8), IP (14) , BIS (4), ISO (3) . Selenite Cystine Broth is useful for detecting *Salmonella* in the non-acute stages of illness when organisms occur in the faeces in low numbers and for epidemiological studies to enhance the detection of low numbers of organisms from asymptomatic or convalescent patients (9). *Salmonella* are also injured during various food processing procedures, including exposure to low temperatures, sub-marginal heat, drying, radiation, preservatives or sanitizers. Recovery of *Salmonella* involves pre- enrichment, selective enrichment and selective plating since *Salmonella* may be present in low numbers in food sample in a injured conditions. This medium is formulated to allow the proliferation of *Salmonella* while inhibiting the growth of competing non - *Salmonella* organisms.

Tryptone provides nitrogenous substances. Lactose/ dulcitol is the fermentable carbohydrate and maintains the pH in medium as selenite is reduced by bacterial growth and alkali is produced. An increase in pH lessens the toxicity of the selenite and results in overgrowth of other bacteria. The acid produced by bacteria due to lactose/dulcitol fermentation serves to maintain a neutral pH. Phosphate maintains a stable pH and also lessens the toxicity of selenite. L-cystine is the reducing agent, improving the recovery of *Salmonella*. Enriched broth is subcultured on solid medium. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite reduces after 6 - 12 hours of incubation (10). Inoculate the sample into recommended pre-enrichment broth, and then transfer 1 ml of mixture to 10 ml of Fluid Selenite Cystine Medium and also to 10 ml Tetrathionate Broth (M032). Incubate and subsequently subculture on to Bismuth Sulphite Agar (M027), Xylose-Lysine-Deoxycholate Agar (M031), Hektoen Enteric Agar (M467) or MacConkey Agar (M081) as recommended by various organization.

Type of specimen

Clinical samples - faeces ; Food and dairy samples

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (12, 13).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (6,7,11).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic 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 guidleines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets

Limitations :

Some organisms may show poor growth due to variable nutritional requirement.

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 coloured bud.

Cultural Response

Cultural characteristics observed when one disc is added to 100 ml selective broth, after an incubation at 35-37°C for 18-24 hours and then sub cultured on XLD Agar (M031).

Organism	Inoculum (CFU)	Recovery	Colour of Colony
Salmonella Choleraesuis ATCC 12011	50-100	luxuriant	red w/black centre
Salmonella ATCC 14028 (00031*)	50-100	luxuriant	red w/black centre
Salmonella Typhi ATCC 6539	50-100	luxuriant	red w/black centre
Salmonella Enteritidis ATCC 13076 (00030*)	50-100	luxuriant	red w/black centre
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	luxuriant	red
Escherichia coli ATCC 8739 (00012*)	50-100	little-none (no increase in numbers)	yellow
Escherichia coli ATCC 25922 (00013*)	50-100	little-none(no increase in numbers)	yellow

Key: (*) Corresponding WDCM numbers

Storage and Shelf Life

Store between 10-30°C in a tightly closed container. Use before expiry date on the label. On opening, product should be properly stored. Improper storage of the product may lead to loss of selectivity. Use before expiry date on the label.
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 (12,13).

Reference

1. Klett A., 1900, Zeitsch Fer Hyg. Und. Infekt., 33: 137.
2. Guth F., 1916, Zbl. Bakt. I. Orig., 77:487.
3. International Organization for Standardization (ISO), 2002 Draft ISO/DIS 6579
4. Bureau of Indian Standards, IS :5887, (Part 3) 1999
5. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
6. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed.,APHA, Washington, D.C.
7. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
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11. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
12. Isenberg H.D. Clinical Microbiology Procedures Handbook 2nd Edition
13. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
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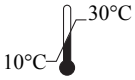
Revision : 00 / 2018

IVD	In vitro diagnostic medical device
CE	CE Marking
	Storage temperature
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