Selenite Broth

LQ070

Intended Use

Recommended as an enrichment medium for isolation of *Salmonella* species from faeces, urine or other pathological materials.

Composition**

Ingredients	g / L
Tryptone	5.000
Lactose	4.000
Sodium phosphate	10.000
Sodium hydrogen selenite	4.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Label the ready to use LQ070 bottle. Inoculate the sample and Incubate at specified temperature and time.

Principle And Interpretation

Klett (1) first demonstrated the selective inhibitory effects of selenite and Guth (2) used it to isolate *Salmonella* Typhi. Leifson fully investigated selenite and formulated the media (3). 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. Selenite 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 number of organisms from asymptomatic or convalescent patients (4).

Tryptone provides nitrogenous substances. Lactose maintains the pH of medium. 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 fermentation serves to maintain a neutral pH. Sodium phosphate maintains a stable pH and also lessens the toxicity of selenite. Enriched broth is subcultured on differential plating media such as Bismuth Sulphite Agar (M027), Brilliant Green Agar (MP016), XLD Agar (MP031) etc. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite decreases after 6 - 12 hours of incubation (5).

Type of specimen

Clinical samples : faeces, urine or other pathological materials; Food samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (6,7).

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

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

Warning and Precautions

In Vitro diagnostic use. 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. Selenite Broth is inhibitory and recommended for selective isolation of *Salmonella* species.
2. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite decreases after 6-12 hours of incubation (1).

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

Sterile clear selenite broth in glass bottles

Colour

Light yellow coloured clear solution.

Quantity of medium

10 ml of medium in bottle

pH

6.80-7.20

Cultural Response

Cultural characteristics observed, after an incubation at 35-37°C for 18-24 hours, when recovered on MacConkey Agar (M082).

Organism	Inoculum (CFU)	Recovery	Colour of colony
Escherichia coli ATCC 8739 (00012*)	50-100	none to poor (no increase in numbers)	pink with bile precipitate
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	good-luxuriant	colourless
Escherichia coli ATCC 25922 (00013*)	50-100	none to poor (no increase in numbers)	pink with bile precipitate
Salmonella Typhi ATCC 6539	50-100	good-luxuriant	colourless
Salmonella Choleraesuis ATCC 12011	50-100	good-luxuriant	colourless

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 2-8°C. 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 (6,7).

Reference

1. Klett A., 1900, Zeitsch Für Hyg. Und. Infekt., 33: 137.
2. Guth F., 1926, Zbl. Bakt. I. Orig., 77:487.
3. Leifson E., 1936, Am. J. Hyg., 24(2) : 423.
4. Kelly, Brenner and Farmer, 2003, Manual of Clinical Microbiology, 8th ed.,Lennett and others (Eds.), ASM, Washington, D.C.
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6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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.
8. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

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IVD *In vitro* diagnostic medical device

CE CE Marking

2°C 8°C Storage temperature

Do not use if package is damaged

Disclaimer :

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