Technical Data Sheet

Tetrathionate Broth

Ordering number: 1.46384.0006

Tetrathionate Broth is suitable for selective enrichment method of isolating *Salmonella* species from feces, urine, water and food.

The medium is specified as enrichment medium for validated detection of *Salmonella* species according to American Public Health Association (APHA).

Tetrathionate Broth is available in tubes and bottles:

- Tetrathionate Broth (article number 146218): 17 ml-**tubes**, filling volume 10 ml
- Tetrathionate Broth (article number 146384): 250 ml-bottle with **screw cap**, filling volume 100 ml

Mode of Action

Tetrathionate Broth is recommended as selective enrichment medium for *Salmonella*. The selectivity of the medium is provided by tetrathionate which suppresses the growth of coliform and other enteric bacteria while supporting growth of organisms, such as *Salmonellae*, that are able to reduce it. Additionally, bile salts largely inhibits gram-positive and gram-negative microorganisms.

Typical Composition

Peptone	14 g/l
Yeast Extract	2.5 g/l
Glucose Monohydrate	1 g/l
Ox Bile	7 g/l
NaCl	5 g/l
Calcium Carbonate	40 g/l
Potassium Tetrathionate	36 g/l
Brilliant Green	70 mg/l

The appearance of the medium is green and clear with white sediment. The pH value is in the range of 6.8-7.2. The medium can be adjusted and/or supplemented according to the performance criteria required.

Application and Interpretation

Tetrathionate Broth, provided in tube or bottle, can be used for detection of *Salmonella*.

Inoculate the media with the sample (about 10% by volume). Incubate the broth medium for 18 to 24 hours at 35-37 °C in an aerobic atmosphere. In case of growth (turbidity of the media), subcultures should be made on selective media such as XLD Agar (article number 146073) or BPLS Agar (article number 146046) for further investigation.

Note: Enrichment broth should be used in parallel with selective and non-selective solid media to increase probability to isolate *Salmonellae*, especially when they are injured or present at very low count in the tested sample.

Storage and Shelf Life

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at +4 °C to +12 °C.

The testing procedures as described on the CoA can be started up to the expiry date printed on the label.

Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 °C, disinfect, incinerate etc.).

Quality Control

Control Strains	ATCC #	Inoculum CFU	Incubation	Expected Results
Salmonella Typhimurium	14028	10-100	20-24 h at 33-35 °C	good growth
			20-24 h at 41-43 °C	good growth
Escherichia coli	8739	10,000-100,000	20-24 h at 33-35 °C	growth inhibited
			20-24 h at 41-43 °C	growth inhibited

Please refer to the actual batch related Certificate of Analysis.

Literature

American Public Health Association (2001), Compendium of Methods for the Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.

American Public Health Association (2005), Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.

Bänffer, J.R. (1971): Comparison of the isolation of Salmonellae from human faeces by enrichment at 37 °C and 43 °C. - Zbl. Bakt. I. Orig., 217; 35-40.

Mueller, (1923): Compt. Rend. Sco. Biol., 89:434.

Kauffmann, F. (1935): Weitere Erfahrungen mit dem kombinierten Anreicherungsverfahren für Salmonellabacillen. Z. Hyg. Infekt. Kr. 177: 26-32.

Palumbo, S., a. Alford, J. (1970): Inhibitory action of tetrathionate enrichment broth. - Appl. Microbiol., 20; 970-976.

United States Pharmacopoeia 38 NF 33 (2015): <62> Microbiological Examination of Non-Sterile Products: Tests For Specified Microorganisms.

Ordering Information

Product	Cat. No.	Pack size
Tetrathionate Broth	146384.0006	6 x 100 ml bottle
Tetrathionate Broth	1.46218.0100	100 x 10 ml tube
Brilliant Green, Phenol Red, Lactose, Sucrose (BPLS) Agar - LI	1.46046.0020	20 x 90 mm plates
Xylose Lysine Deoxycholate (XLD) Agar - LI	1.46073.0020	20 x 90 mm plates
Xylose Lysine Deoxycholate (XLD) Agar - LI	1.46073.0120	120 x 90 mm plates

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