

TM 423 – TETRATHIONATE BROTH BASE W/O IODINE & BG (FLUID TETRATHIONATE MEDIUM W/O IODINE & BG)

INTENDED USE

For selective isolation of Salmonellae from foods and other pathological materials.

PRODUCT SUMMARY AND EXPLANATION

Salmonella are ubiquitous in the environment. These organisms are usually present in small numbers compared to coliforms; therefore, it is necessary to examine a relatively large sample to isolate the organisms. *Salmonella* present in food samples may be sub lethally damaged during various stages of food processing where they may be exposed to low temperatures, heat drying, radiations, various chemicals. These damaged cells are able to cause spoilage, and if ingested cause diseases under favorable conditions. Therefore, it is important to resuscitate these damaged bacteria before enumeration. Fluid Tetrathionate Medium (with added iodine and brilliant green) is recommended for the selective enrichment of *Salmonella* including *Salmonella* Typhi from faeces, urine, food and other material of sanitary importance. The medium, originally formulated by Mueller is recommended by APHA for enrichment of *Salmonella*. Due to the addition of iodine and potassium iodide, tetrathionate is formed in the medium. Organisms possessing the enzyme tetrathionate reductase grow in this medium.

Aseptically inoculate test specimen into Fluid Tetrathionate medium (with added iodine and brilliant green) and incubate at 35-37°C for 18-24 hours. Following the incubation, isolate onto selective media plates. Refer standard procedures for enrichment and isolation.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	2.500
Peptone	2.500
Bile salts	1.000
Calcium carbonate	10.000
Sodium thiosulphate	30.000

PRINCIPLE

Tryptone and peptone are the sources of carbon, nitrogen, vitamins and minerals. Bile salts inhibit accompanying gram-positive microorganisms. The selectivity depends on the ability of thiosulphate and tetrathionate in combination to suppress commensal coliform organism. Calcium carbonate neutralizes the acidic tetrathionate decomposition products. Brilliant green also helps to select *Salmonella* by inhibiting the accompanying bacteria. For further confirmation, streak the enriched cultures after incubation, on plates of Brilliant Green Agar, MacConkey Agar and Bismuth Sulphite Agar.

INSTRUCTION FOR USE

- Suspend 46.0 grams in 1000 ml purified/distilled water and heat just to boiling.
- DO NOT AUTOCLAVE. Cool below 45°C and add 20 ml iodine solution (iodine - 6 grams and potassium iodide - 5 grams in 20 ml distilled water) and 10 ml of 0.1% brilliant green solution.
- Mix well and dispense in 10 ml quantities. This complete medium should be used on the day of preparation otherwise sterilized broth base may be stored for some time.
- Do not heat after the addition of iodine solution. Use the medium immediately after addition of iodine.

Note: Due to the presence of calcium carbonate, the prepared medium forms opalescent solution with white precipitate.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder	: White to cream homogeneous free flowing powder.
Appearance of prepared medium	: Complete medium with added brilliant green and iodine solution - Light green coloured, opalescent solution with heavy white precipitate, which on standing the precipitate settles down.
pH (at 25°C)	: 5.6± 0.2

INTERPRETATION

Cultural characteristics observed with added brilliant green and iodine solution when sub cultured on MacConkey Agar after enrichment in Tetrathionate medium.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of colony	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	50-100	Little or no increase in number	Pink-red with bile precipitate	35-37°C	18-24 Hours
<i>Salmonella Choleraesuis</i>	12011	50-100	Good-excellent	Colourless	35-37°C	18-24 Hours
<i>Salmonella Typhi</i>	6539	50-100	Good-excellent	Colourless	35-37°C	18-24 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Good-excellent	Colourless	35-37°C	18-24 Hours
<i>Escherichia coli</i>	8739	50-100	Little or no increase in number	Pink-red with bile precipitate	35-37°C	18-24 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL













After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Cherry et al, 1972, Appl. Microbiol., 24:334
3. Hartman and Minich, 1981, J. Food and Prot., 44:385
4. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
5. Mueller, 1923, Compt. Rend. Sco. Biol., 89:434.



6. 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.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP MedNet GmbH Borkstrasse 10, 48163 Moenster, Germany Authorized Representative	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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