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Tetrathionate broth

Used with iodine for the selective enrichment of salmonellae from various materials.

REF: BS.1/AE01.100.0100	100 Gram	REF: BS.1/AE01.250.0250	250 Gram
REF: BS.1/ AE01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Tetrathionate Broth Base is used as a selective enrichment for the cultivation of Salmonella spp. Salmonella organisms may be injured in food-processing procedures, which include exposure to low temperatures, sub-marginal heat, drying, radiation, preservative, and sanitizers. Mueller demonstrated the effectiveness of Tetrathionate Broth for enriching typhoid and paratyphoid bacilli while inhibiting coliform organisms. Using modified Mueller's broth, Kauffmann increased the number of positive isolates. Tetrathionate Broth was used in studies for the poultry industry and in a collaborative study for rapid screening of Salmonella in food. Tetrathionate Broth Base, abbreviated as TT Broth Base, is specified in standard methods for Salmonella testing. The FDA, Bacteriological Analytical Manual incorporate Tetrathionate Broth Base as a pre-enrichment medium for detecting Salmonella in food materials.

METHOD PRINCIPLE

Tetrathionate and excess thiosulfate suppress coliform microorganisms and other accompanying bacteria, whereas all tetrathionate-reducing bacteria (e.g. salmonellae and Proteus) can multiply more or less normally in this medium. Acidic tetrathionate decomposition products are formed, which are neutralized by calcium carbonate Bile salts largely inhibit all microorganisms, which do not normally live in the intestine. The United States Pharmacopeia recommends the addition of brilliant green, which suppresses, above all, the Gram-positive microbial flora. The resulting culture medium has a very strong inhibitory effect; it is therefore sometimes better to omit the brilliant green in order to obtain satisfactory yields of salmonellae. Proteus can be suppressed by adding 0.04 g novobiocin/litre

MEDIA COMPOSITION

Item	Formula per liter of medium
- Enzymatic Digest of Casein	2.500 gm.
- Enzymatic Digest of Animal Tissue	2.500 gm.
- Bile Salts	1.000 gm.
- Calcium Carbonate	10.00 gm.
- Sodium Thiosulfate	30.00 gm.

Final pH 8.4 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person.Do not ingest or inhale.

Good Laboratories practices using appropriate precautions shouldbe followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plentyof soap and water. In case of severe injuries; seek medical adviceimmediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.
S57: use appropriate container to avoid environmental contamination.
S61: avoid release in environment.

For further information, refer to the Tetrathionate broth Material safety data sheet.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile tubes
- Incubator
- Autoclave

STORAGE AND STABILITY

BioScien Tetrathionate broth should be stored between 10-30°C in a firmlyclosed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature andsources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

PREPARATION

1. Dissolve 46 g of the medium in one liter of purified water.
2. Adjust pH to 8.4 ± 0.2 at 25°C
3. Heat with frequent agitation and boil for one minutes to completely dissolve the medium.
4. Cool to 45-50°C and add 20 mL of the Iodine-Potassium Iodide Solution to the prepared Tetrathionate Broth Base. If preparing solution, add 6 grams Iodine + 5 grams Potassium Iodide in 20 mL of purified water.
5. DO NOT REHEAT AFTER ADDING IODINE SOLUTION.

Note:
Do not add Iodine/Potassium Iodide Solution to tubes until just before inoculation. Chemical Tetrathionate inhibits by oxidation of Thiosulfate through the addition of Iodine just prior to use.

Deterioration

The color of ***BioScien*** Tetrathionate broth is white to off-white homogeneous free flowing powder. Prepared Medium is Prepared medium is milky white to slightly yellow-white and opaque solution forms in tubes. If there are anyphysical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

Clinical samples

Food

Water

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

PERFORMANCE CHARACTERISTICS

Oranism	Growth
Escherichia coli ATCC® 25922	Inhibited
Salmonella arizonae ATCC® 13314	luxuriant
Salmonella typhimurium ATCC® 14028	luxuriant
Salmonella enterica ATCC® 13076	
Shigella flexneri ATCC® 12022	Inhibited
Enterococcus faecalis ATCC® 29212	Inhibited

REFERENCES

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SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		