

Fluid Thioglycollate Medium

For sterility testing of biologicals and for cultivation of aerobes, anaerobes and microaerophiles.

REF: BS.1/FT01.100.0100
REF: BS.1/FT01.500.0500

100 Gram
500 Gram

REF: BS.1/FT01.250.0250

250 Gram

CLINICAL SIGNIFICANCE

Brewer (1) formulated Fluid Thioglycollate Medium for rapid cultivation of aerobes as well as anaerobes including microaerophiles by adding a reducing agent and small amount of agar. The BP (2), EP (3), USP (4), and AOAC (5) have recommended the media for sterility testing of antibiotics, biologicals and foods and for determining the phenol coefficient and sporidical effect of disinfectants. However, it is intended for the examination of clear liquid or water-soluble materials. Fluid Thioglycollate Medium is also routinely used to check the sterility of stored blood in blood banks

METHOD PRINCIPLE

Dextrose, tryptone, yeast extract, L-cystine provide the growth factors necessary for bacterial multiplication. L-cystine and sodium thioglycollate allows Clostridium to grow in this medium even under aerobic conditions. Also the small amount of agar used in the medium favors the growth of aerobes as well as anaerobes in the medium, even if sodium thioglycollate is deleted from the medium. Sodium thioglycollate act as a reducing agent and neutralizes the toxic effects of mercurial preservatives and peroxides formed in the medium, thereby promoting anaerobiosis, and making the medium suitable to test materials containing heavy metals. Any increase in the oxygen content is indicated by a colour change of redox indicator, resazurin to red. The small amount of agar helps in maintaining low redox potential for stabilizing the medium.

MEDIA COMPOSITION

Item	Formula per liter of medium
-Casein peptone	15.0 gm
-Yeast extract	5.0 gm
-dextrose	5.0 gm
-Sodium chloride	2.5 gm
-L-Cystine	0.5 gm
-Sodium thioglycollate	0.5 gm
-Resazurin	0.001 gm
-Agar	0.750 gm

PRECAUTIONS AND WARNINGS

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

Good Laboratories practices using appropriate precautions should be 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 plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- 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 Fluid Thioglycollate Medium material safety data sheet.

STORAGE AND STABILITY

BioScien Fluid Thioglycollate Medium should be stored between 10-30°C in a firmly closed 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 and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH 7.1±0.2 at 25°C

PREPARATION

Suspend 29.25 grams in 1000 ml distilled water, mix well. Heat if necessary to ensure complete solution. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 25°C and store in a cool dark place preferably below 25°C.

Note: If more than the upper one-third of the medium has acquired a pink-purple colour, the medium may be restored once by heating in a water bath or in free flowing steam until the pink-purple colour disappears

Deterioration

The color of **BioScien** Fluid Thioglycollate Medium is Cream to yellow homogeneous free flowing powder. Prepared Media is Light straw coloured, clear to slightly opalescent solution with upper 10% or less medium pink-purple on standing. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

Pharmaceutical samples for sterility testing, clinical samples- pus, wounds

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile tubes
- Incubator
- Autoclave

Performance Characteristics

Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 24 hours.

Microorganisms	Growth
<i>Clostridium sporogenes</i> ATCC 19404	luxuriant
<i>Clostridium sporogenes</i> ATCC 11437	luxuriant
<i>Micrococcus luteus</i> ATCC 9341	luxuriant
<i>Bacteroides fragilis</i> ATCC 23745	luxuriant
<i>Bacteroides vulgatus</i> ATCC 8482	luxuriant
<i>Streptococcus pneumoniae</i> ATCC 6305	luxuriant
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923	luxuriant
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 6538	luxuriant
<i>Salmonella Abony</i> NCTC 6017	luxuriant
<i>Escherichia coli</i> NCTC 9002	luxuriant
<i>Escherichia coli</i> ATCC 25922	luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853	luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 9027	luxuriant

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

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.

REFERENCES

1. Brewer, 1940, J. Am. Med. Assoc., 115:598.
2. The British Pharmacopoeia, 2022, Medicines and Healthcare products Regulatory Agency.
3. European Pharmacopoeia, 2022, 10 th volume, European Directorate for the quality of medicines & Healthcare.
4. The United States Pharmacopoeia-National Formulary (USP-NF), 2022
5. Williams H., (Ed.), 2005, Official Methods of Analysis of the Association of Official Analytical Chemists, 19th Ed., AOAC, Washington, D.C
6. Nungester, Hood and Warren, 1943, Proc. Soc. Exp. Biol. Med., 52:287.
7. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
8. 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.