

Fluid Thioglycollate Medium

Fluid Thioglycollate Medium is recommended for sterility testing of biologicals and for cultivation of aerobes, anaerobes and microaerophiles.

REF: BS.1/DB01.100.0100
REF: BS.1/DB01.500.0500

100 Gram
500 Gram

REF: BS.1/DB01.250.0250

250 Gram

CLINICAL SIGNIFICANCE

Fluid Thioglycollate Medium was originally developed by Brewer (1) to support the rapid growth of both aerobic and anaerobic microorganisms through the incorporation of a reducing agent and a small quantity of agar. This medium is recommended by the USP (2), BP (3), EP (4), and AOAC (5) for sterility testing of antibiotics, biological products, and food items, as well as for evaluating the phenol coefficient and the sporicidal activity of disinfectants. It is specifically designed for the microbiological examination of clear liquid samples or water-soluble materials.

METHOD PRINCIPLE

Dextrose monohydrate, pancreatic digest of casein, yeast extract, L-cystine provide the growth factors necessary for bacterial multiplication. Sodium thioglycollate and L-cystine act as a reducing agent lowering the oxidation-reduction potential by removal of oxygen. This condition helps to prevent the accumulation of peroxides which is toxic in nature. The SH group also neutralizes the antibacterial effect of mercurial preservatives and other heavy metal compounds which exert a bacteriostatic effect in the materials under examination. Any increase in the oxygen content is indicated by a colour change of redox indicator resazurin; to red (6,7,8). The small amount of agar helps in maintaining low redox potential and stabilizes the medium (9). In sterility checking, it is recommended to dilute the sample containing preservatives, with this broth to reduce the toxicity and enhance the growth of contaminants, if any.

MEDIA COMPOSITION

Item	Formula per liter of medium
- Pancreatic digest of casein	15
- Yeast extract	5
- Dextrose	5.5
- Sodium chloride	2.5
- Sodium Azide	0.2
- L-Cystine	0.5
- Sodium thioglycollate	0.5
- Resazurin sodium	0.01
- Agar	0.750

Final pH 7.1 ± 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 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 dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored 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.

MEDIA PREPARATION

1. Suspend 29.25 grams of dehydrated medium in 1000 ml purified/distilled water.
2. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.
3. 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 colour, the medium may be restored once by heating in a water bath or in free flowing steam until the pink colour

Deterioration

The color of **BioScien** Fluid Thioglycollate Medium is Cream to yellow homogeneous free flowing powder. Colour and Clarity of prepared medium Light straw coloured clear to slightly opalescent solution with upper 10% or less medium pink on standing. If there are any physical changes, discard the medium.

The hydrated medium is Amber coloured clear solution without any precipitate, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes
- Sterile loops
- Incubator

PERFORMANCE CHARACTERISTICS

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature

Cultural characteristics observed after an incubation at 30-35°C for not more than 3 days.

Test Organisms	Growth
<i>Escherichia coli</i> ATCC 25922	Luxuriant
<i>Staphylococcus aureus</i> ATCC25923	Luxuriant
<i>Clostridium sporogenes</i> ATCC 19404	Luxuriant
<i>Clostridium sporogenes</i> ATCC 11437	Luxuriant
<i>Clostridium perfringens</i> ATCC 13124	Luxuriant
<i>Bacteroides fragilis</i> ATCC 23745	Luxuriant
<i>Bacillus subtilis</i> ATCC 6633	Luxuriant

SYMBOLS IN PRODUCT LABELLING		
IVD	For in-vitro diagnostic use	 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	

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. U.S. Pharmacopoeia, 2009, United States Pharmacopoeia Convention, Inc., Rockville, MD.
3. British Pharmacopoeia, 2009, The Stationery office British Pharmacopoeia.
4. European Pharmacopoeia, 2009, European Department, for the Quality of Medicines.
5. Williams. (Ed.), 2005, Official Methods of Analysis of the Association of Official Analytical Chemists, 19th ed., AOAC, Washington, D.C.
6. Marshall, Gunnison and Luxen, 1940, Proc. Soc. Exp. Biol. Med., 43:672.
7. Nungester, Hood and Warren, 1943, Proc. Soc. Exp. Biol. Med., 52:287.
8. Portwood, 1944, J. Bact., 48:255.
9. MacFaddin J.F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of „Medical Bacteria, Vol.1, Williams and Wilkins, Baltimore.

