Technical Data

Fluid Thioglycollate Medium

LQ509

Sterility test media also used as a general purpose medium for the growth of aerobes, anaerobes & microaerophiles.

Composition**

Ingredients	Gms / Litre
Pancreatic digest of casein	15.000
Yeast extract	5.000
Dextrose	5.500
Sodium chloride	2.500
L-Cystine	0.500
Sodium thioglycollate	0.500
Resazurin sodium	0.001
Agar	0.750

**Formula adjusted, standardized to suit performance parameters

Directions

Label the ready to use bottle. Dispense or Inoculate as you require. Incubate at 30-35°C for 18-24 hours for aerobic and anaerobic bacteria and further for seven days.

Principle And Interpretation

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 USP (2), BP (3), EP (4) and AOAC (5) have recommended the media for sterility testing of antibiotics, biologicals and foods and for determining the phenol coefficient and sporicidal 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 (10). Dextrose, pancreatic digest of casein, 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(11). 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 (1). 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. (9,10). 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 for stabilizing the medium (9).

Quality Control

Appearance
Sterile clear Fluid Thioglycollate Medium in glass bottle.

Colour
Light straw coloured solution with upper 10% or less medium pink on standing.

Quantity of Medium
200 ml of medium in glass bottle.

Reaction

6.90- 7.30

Sterility test
Passes release criteria

Cultural response
Cultural characteristics was observed after incubation at 35-37°C for 24-48 hours.

Organism	Growth	Growth (under anaerobic conditions)	Growth (at 22-28°C)
Bacillus subtilis ATCC 6633	Luxuriant	-	-
Streptococcus pyogenes ATCC 19615	Luxuriant	-	-
Neisseria meningitidis ATCC 13090	Luxuriant	-	-
Micrococcus luteus ATCC10240	Luxuriant	-	-
Clostridium sporogenes ATCC 11437	-	Luxuriant	-
Bacteroides vulgatus ATCC 8482	-	Luxuriant	-
Candida albicans ATCC 10231	-	-	Luxuriant

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label.

Reference

1. Brewer, 1940, J. Am. Med. Assoc., 115:598. 2. The United States Pharmacopoeia, 2009, The United States Pharmacopoeial Convention, Rockville, MD. 3. British Pharmacopoeia, 2009, The Stationery office British Pharmacopoeia 4. European Pharmacopoeia, 2009, European Dept. for the quality of Medicines. 5. Williams H., (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. 10. Federal Register, 1992, Fed. Regist., 21:640.2.17. 11. Quastel and Stephenson, 1926, J.Biochem., 20:1125.

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