



Fluid Thioglycollate Medium w/ HM Peptone B

Intended Use:

Recommended for cultivation of anaerobic, microaerophilic and aerobic microorganisms and for sterility testing.

Composition**

ingreatents	Gms / Litre
Tryptone	15.000
Yeast extract	5.000
HM peptone B #	5.000
Dextrose (Glucose)	5.500
Sodium chloride	2.500
L-Cystine	0.500
Sodium thioglycollate	0.500
Resazurin sodium	0.001
Agar	0.750
Final pH (at 25°C)	7.2±0.2
**Formula adjusted, standardized to suit performance parameters	

Equivalent to Beef extract

Directions

Suspend 34.75 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. 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 colour, the medium may be restored once by heating in a water bath or in free flowing steam until the pink colour disappears.

Principle And Interpretation

Brewer (1) formulated Fluid Thiolglycollate Medium for rapid cultivation of aerobes as well as anaerobes by adding a reducing agent and small amount of agar. The AOAC (2) have recommended the media for sterility testing of antibiotics, biologicals and foods and for determining the phenol coefficient and sporicidal effect of disinfectants. Fluid Thioglycollate Medium w/ HM Peptone B is recommended for the detection of viable bacteria in live vaccines, as recommended by the Animal and Plant Health Inspection Services, USDA (3).

Dextrose, Tryptone, yeast extract, HM peptone B, L-cystine provide the growth factors necessary for bacterial multiplication. 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 (8,9). Any increase in the oxygen content is indicated by a colour change of redox indicator, resazurin to red (7,8,9). The small amount of agar helps in maintaining low redox potential for stabilizing the medium (6). 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).

Type of specimen

Disinfectants, Antibiotic and Food samples

Specimen Collection and Handling

For samples, follow appropriate techniques for sample collection, processing as per guidelines (2). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. It is intended for the examination of clear liquid or water-soluble materials.

Performance and Evaluation

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

Quality Control

Appearance

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.

Reaction

Reaction of 3.47% w/v aqueous solution at 25°C. pH : 7.2±0.2

pН

7.00-7.40

Cultural Response

Cultural characteristics observed after an incubation at 25-30°C for 40-72 hours.

Organism	Inoculum (CFU)	Growth
<i>Bacillus subtilis</i> subsp. <i>spizizenii</i> ATCC 6633 (00003*)	50-100	luxuriant
Candida albicans ATCC 10231 (00054*)	50-100	luxuriant
Clostridium sporogenes ATCC 11437	50-100	luxuriant
<i>Micrococcus luteus</i> ATCC 10240	50-100	luxuriant
<i>Bacteroides vulgatus</i> ATCC 8482	50-100	fair-good
Neisseria meningitidis ATCC 13090	50-100	luxuriant
Streptococcus pyogenes ATCC 19615	50-100	luxuriant

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in 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.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Reference

1. Brewer, 1940, J. Am. Med. Assoc., 115:598.

2. Cunniff P. (Ed.), 1995, Official Methods of Analysis of the Association of Official Analytical Chemists, 16th ed., AOAC, Washington, D.C.

- 3. Federal Register, 1992, Fed. Regist., 21:113.26.
- 4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
- 5. 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.
- 6. MacFaddin J.F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of, Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

7. Marshall, Gunnison and Luxen, 1940, Proc. Soc. Exp. Biol. Med., 43:672.

8. Nungester, Hood and Warren, 1943, Proc. Soc. Exp. Biol. Med., 52:287.

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