Brewer Thioglycollate Medium

Intended Use
Brewer Thioglycollate Medium is used for testing the sterility of biological products and for isolation of aerobic and anerobic organisms.

Summary
Brewer thioglycollate medium is prepared as per the original formula of Brewer. The value of combining a small amount of agar and a reducing substance was demonstrated by Brewer. Brewer's experiments revealed that in a liquid medium containing 0.05% agar, anaerobes grew equally well in the presence or absence of sodium thioglycollate. Marshall, Gunnish and Luxen reported satisfactory cultivation of anaerobes in Brewer's Thioglycollate Medium in the presence of a mercurial preservative. Nungester, Hood and Warren and Portwood confirmed the neutralization of the bacteriostatic effect of mercurial compounds by sodium thioglycollate.

Principle
Brewer Thioglycollate medium contains proteose peptone and beef infusion which support luxuriant growth of even fastidious bacteria. Sodium thioglycollate helps to create anaerobic condition as well as neutralizes toxicity of mercurial compounds if present in test material. Sodium chloride maintains the osmotic equilibrium whereas potassium phosphate acts as a buffer. Small quantity of agar present maintains anaerobic conditions at the bottom of the broth. Methylene blue indicates oxygen content of the medium by exhibiting bluish-green colour to the medium in presence of oxygen. The uninoculated medium shows bluish green colour at the top indicating presence of oxygen in that part.

Formula*

Ingredients	**g/L**
Proteose Peptone	10.0
Beef, Infusion from 500.0	17.5
Dextrose	5.0
Sodium Chloride	5.0
Dipotassium Phosphate	2.0
Sodium Thioglycolate	0.5
Methylene Blue	0.002
Agar	0.5
Final pH (at 25°C)	7.2 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding

Directions
1. Suspend 40.50 g of the powder in 1000 mL purified / distilled water.
2. Heat to boiling to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 mins as per validated cycle.

Quality Control

Dehydrated Appearance: Light yellow to yellow coloured, homogeneous, free flowing powder.
Prepared Appearance: Yellow coloured, clear to slightly opalescent fluid with upper portion less than 10% medium turning bluish green on standing.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is observed after an incubation at 30°C-35°C for ≤ 3 days.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time, inoculating 10 - 100 cfu (at 30°C-35°C for ≤ 3 days).

Organisms (ATCC)	**Growth**
Staphylococcus aureus subsp. *aureus* (6538)	Good
Pseudomonas aeruginosa (9027)	Good
Kocuria rhizophila Strain PCI 1001 (9341)	Good
Bacteroides vulgatus (8482)	Good
Clostridium sporogenes (11437)	Good
Clostridium sporogenes (19404)	Good

Interpretation of Results

1. After incubation, growth is evidenced by the presence of turbidity compared to an uninoculated control.
2. Strict aerobes tend to grow in a thin layer at the surface of the broth; obligate anaerobes will grow only in that portion of the broth below the upper oxidized layer.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions/Limitations

1. Do not reheat the media more than once; continued reheating gives rise to toxicity.
2. Anaerobes can be overgrown by more rapidly growing facultative organisms.
3. Examine and gram stain broth if plating medium reveals no growth. Never rely on broth cultures exclusively for isolation of anaerobes.
4. Some anaerobes may be inhibited by metabolic products or acids produced from more rapidly growing facultative anaerobes.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Brewer J. H., 1940, J. Bacteriol., 39:10
2. Brewer J. H., 1940, J.A.M.A., 115:598.
3. Marshall, Ginnish and Luxen. 1940. Proc. Soc. Exp. Biol. Med. *43*:672.
4. Nungester, Hood and Warren. 1943. Proc. Soc. Exp. Biol. Med. 52:287.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	**Product description**	**Pack Size**
201020260500	Dehydrated Culture Media	500 g