

Thioglycollate Broth with Liver Extract

Intended Use:

Recommended for mass cultivation of anaerobes.

Typical Composition (g/litre) **

Peptone 10.0; Liver Tissue 250.0; Muscle Tissue 250.0; Sodium thioglycolate 1.0;
Dipotassium hydrogen phosphate 4.0; Sodium chloride 5.0; Final pH (at 25°C) 8.2±0.2

**Formula adjusted, standardized to suit performance.

Mode of Action

Anaerobic microorganisms have long been known as constituents of the normal bacterial flora of human and animal organisms. Extremely different varieties of anaerobic organisms are of importance for the examination of food and in the clinical microbiology. Thioglycollate Broth w/Liver Extract is modification of original Thioglycollate medium (1, 2), recommended for the cultivation of anaerobic organisms on large scale. It is a nutritious medium due to the presence of Peptone, Liver and Muscle infusion. Peptones supply the nitrogenous compounds and growth factors. Liver and Muscle infusion provide trace minerals, growth factors and vitamins for the growth of wide variety of organisms. Sodium thioglycolate acts as a reducing agent, which lowers the oxidation-reduction potential of the medium thereby enabling the obligate anaerobes to multiply. Added glucose, act as the source of energy. Dipotassium phosphate and sodium chloride helps in maintaining buffering action and isotonic conditions respectively in the medium.

Preparation

Suspend 30.0 grams in 1000 ml distilled water. Heat if necessary, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add 0.5% sterile glucose solution. Mix thoroughly and then dispense as desired.

Storage

Store below 30°C in tightly 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 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.

Specimen

Clinical specimen collection, handling and processing, as per established guidelines (3, 4).

Experimental Procedure and Evaluation

Appearance of medium cream to yellow homogeneous free flowing powder.

Colour and Clarity of prepared medium Amber coloured, clear to very slightly opalescent solution.

Proceed as per standard guidelines. Reaction of 3.0% w/v aqueous solution at 25°C. pH: 8.2±0.2

Cultural Response Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Quality Controls

Organism	Inoculum	Growth
Clostridium perfringens ATCC 12924	50-100	Good
Clostridium sporogenes ATCC 11437	50-100	Good
Streptococcus pyogenes ATCC 19615	50-100	Good
Bacillus subtilis subsp. spizizenii ATCC 6633	50-100	Good
Micrococcus luteus ATCC 10240	50-100	Good
Neisseria meningitidis ATCC 13090	50-100	Good
Bacteroides vulgatus ATCC 8482	50-100	Fair- Good

Reference

1. Brewer J. H., 1940, J. Am Med. Assoc., 115, 598.
2. Brewer J. H., 1940, J. Bacteriol. 39:10.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. 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.