Technical Information

Thioglycollate Medium w/o Indicator (Diagnostic Thioglycollate Medium)

Product Code: DM 1191

Application: Thioglycollate Medium without Indicator is used for enrichment of blood cultures.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	17.000
Papaic digest of soyabean meal	3.000
Dextrose	6.000
Sodium chloride	2.500
Sodium thioglycollate	0.500
L-Cystine	0.250
Sodium sulphite	0.100
Agar	0.700
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Thioglycollate Medium without Indicator is a semisolid medium which was formulated by Brewer [1] for the growth of aerobic and anaerobic microorganisms [2, 3]. Previously methylene blue was added in the medium as an Eh indicator but has been omitted now to enable detection of early growth and avoids any toxic effects of indicator. This medium supports a minimal inoculum with early visibility of growth. Obligate aerobes grow at the top of the medium, while anaerobes grow at the bottom of the medium. This medium is nutritious and favours the growth of *Clostridium butyricum, Campylobacter* species, *Bacteroides* species and Pneumococci using minimal inocula. *Brucella* species which fail to grow in the presence of indicator can grow in this medium. The broth with addition of 10% v/v serum may be used for cultivation of *Trichomonas vaginalis.* It can also be used as transportation medium for which calcium carbonate is added into the medium. Calcium carbonate neutralizes the acid produced during growth and avoids rapid growth and death of gram-negative cocci, *Clostridium perfringens* and other acid-sensitive bacteria. Casein enzymic hydrolysate, papaic digest of soyabean meal, dextrose, L-cystine provides nitrogenous and carbonaceous compounds, fermentable carbohydrate and trace elements. Sodium thioglycollate act as a reducing agent. The reducing action provided by sodium thioglycollate and sodium sulphite binds molecular oxygen, thereby maintaining a low Eh [4]. A small amount of agar is added to retard the absorption of oxygen by reducing convection currents in the medium.

Methodology

Suspend 30.05 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the medium in an upright position. For maintenance of viability of cultures, add small amount of calcium carbonate into the containers before filling.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light amber coloured very slightly opalescent, viscous solution.

Reaction
Reaction of 3.0% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range
6.80-7.20

Cultural Response/Characteristics
DM1191: Cultural characteristics observed after an incubation at 35-370C for 18-48 hours.

Organism	Inoculum (CFU)	Growth
Bacteroides vulgatus ATCC 8482	50-100	Poor-fair
Clostridium sporogenes ATCC 11437	50-100	Good-Luxuriant
Candida albi cans ATCC 10231	50-100	Good-Luxuriant
Bacillus subtilis ATCC 6633	50-100	Good-Luxuriant
Micrococcus luteus ATCC 10240	50-100	Good-Luxuriant
Neisseria meningitidis ATCC 13090	50-100	Good-Luxuriant
Streptococcus pyogenes ATCC 19615	50-100	Good-Luxuriant

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Brewer J. H., 1940, J. Bacteriol., 39:10.
2. Vera H. D., 1944, J. Bacteriol., 47:59-70.
3. Hansen P. A., Price K. E. and Clements M. F., 1952, J. Bacteriol., 64:772.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol.1 William and Wilkins, Baltimore.

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