Thioglycollate Medium w/o Indicator (Diagnostic Thioglycollate Medium)

M191

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

Directions

Suspend 30.05 grams in 1000 ml distilled water. Heat to boiling 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.

Principle And Interpretation

Thioglycollate Medium without Indicator is a semisolid medium originally formulated by Brewer (1) for the growth of aerobic and anaerobic microorganisms (2, 3). Previously methylene blue was incorporated in the medium as an Eh indicator but has been omitted now to enable recognition 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 etc. from 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 incorporated in the medium. Calcium carbonate neutralizes the acid produced during growth and avoid 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 serves as a reducing agent. The small amount of agar helps in anaerobiosis. 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.

Quality Control

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
6.80-7.20

Cultural Response
M191: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth
Cultural Response		
Bacteroides vulgatus ATCC 8482	50-100	poor-fair
Clostridium sporogenes ATCC 11437	50-100	good-luxuriant
Candida albicans 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
Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference
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.

Revision : 02 / 2015