Thioglycollate Medium w/o Dextrose

M190

Thioglycollate Medium without Dextrose is used for cultivation of aerobes, microaerophiles, anaerobes and for fermentation studies with various carbohydrates.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Sodium chloride	2.500
Dipotassium phosphate	1.500
Sodium thioglycollate	0.600
L-Cystine	0.400
Sodium sulphite	0.200
Methylene blue	0.002
Agar	0.500
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 25.7 grams in 1000 ml distilled water. If the medium is to be used for fermentation studies or for diagnostic work adds 0.5 to 1% carbohydrate of choice. Heat to boiling to dissolve the medium completely. Dispense and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Alternatively, sterile carbohydrate solutions may be added to the broth after sterilization. The prepared medium should be stored in the dark at room temperature.

Note: If more than the upper one-third has acquired a green colour, the medium may be restored once by heating in a waterbath or free flowing steam until the green colour disappears.

Principle And Interpretation

Thioglycollate Medium without Dextrose is the modification of original Thioglycollate medium (1, 2) used for the fermentation study of anaerobes and for enhancement of sporulation. Omission of dextrose facilitates it to be used in fermentation studies with the addition of desired carbohydrate. Some Clostridia remain viable for a longer period and sporulate better in the absence of carbohydrate and thus this medium could be used for sporulations.

Casein enzymic hydrolysate, L-cystine and salts provide essential nutrients like nitrogenous compounds, carbon, sulphur, minerals and amino acids. The reducing action provided by sodium thioglycollate and sodium sulphite binds molecular oxygen, thereby maintaining a low Eh (3). A small amount of agar is added to retard the absorption of oxygen by reducing convection currents in the medium. Methylene blue is a redox indicator.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light yellow coloured very slightly opalescent viscous solution with upper 10% or less medium green on standing

Reaction
Reaction of 2.57% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
M190: Cultural characteristics observed after an incubation at 35-37°C for 48 hours(in an appropriate atmosphere).

Organism	Inoculum (CFU)	Growth

Cultural Response

Bacillus subtilis ATCC 6633	50-100	good
Bacteroides vulgatus ATCC 8482	50-100	fair
Candida albicans ATCC 10231	50-100	good
Clostridium sporogenes ATCC 11437	50-100	good-luxuriant
Micrococcus luteus ATCC 10240	50-100	good
Neisseria meningitidis ATCC 13090	50-100	good
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant

Storage and Shelf Life

Store below 30°C and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1.Brewer J. H., 1940, J. Am Med. Assoc., 115, 598.
2.Brewer J. H., 1940, J. Bacteriol., 39:10.
3.MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol.1 William and Wilkins, Baltimore.

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