Thiogel Medium

M610

Thiogel Medium is recommended for cultivation of strictly anaerobic, aerobic as well as facultative microorganisms and for the identification of pure cultures on the basis of their ability to liquefy gelatin.

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
Gelatin	50.000
Agar	0.700
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 80.05 grams in 1000 ml distilled water, preheated to a temperature of 50°C. Mix well and allow to stand for 5 minutes. Heat to boiling to dissolve the medium completely. Dispense in test tubes filling them upto half of the tubes. Sterilize by autoclaving at 118°C for 15 minutes.

Principle And Interpretation

Proteolytic organisms digest proteins and consequently liquefy gelatin or coagulated serum. Liquefaction of gelatin, being the commonest proteolytic property, is routinely used as an index of proteolytic activity. Gelatin will not by itself support the growth of many pathogens and is therefore incorporated into a nutrient medium (1). In Thiogel Medium, gelatin is incorporated into Thioglycollate Medium without Indicator (2). Thioglycollate Medium was modified by Brewer (3, 4) by replacing meat infusion in original formulation by plant soya (5) and casein peptones (6) to enhance growth. Thioglycollate Medium is used for cultivation of strict anaerobes, microaerophiles and aerobic microorganisms and for identifying the pure cultures on the basis of their ability to liquefy gelatin.

Casein enzymic hydrolysate, papaic digest of soyabean meal, dextrose and L-cystine in the medium provide nitrogenous and carbonaceous compounds, trace elements, sulphur, and fermentable carbohydrate etc. Thioglycollate is the reducing agent, which binds to the molecular oxygen and thus inhibits the accumulation of peroxides, which are toxic to some microorganisms. Small amount of agar renders and maintains anaerobic condition at the bottom of the tube so that incubation under anaerobic conditions is not necessary. Gelatin serves as the substrate for determining the presence or absence of gelatinase enzyme in microorganisms.

Quality Control

Appearance
Cream to yellow homogeneous coarse powder

Gelling
Semisolid, comparable with 5.0% gelatin gel.

Colour and Clarity of prepared medium
Light straw coloured opalescent viscous gel forms in tubes.

Reaction
Reaction of 8.0% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M610: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Gelatin liquefaction
Cultural Response			
Bacillus subtilis ATCC 6633	50-100	good-luxuriant	negative reaction
Bacteroides fragilis ATCC 25285	50-100	good-luxuriant	negative reaction
Clostridium sporogenes ATCC 11437	50-100	good-luxuriant	positive reaction
Micrococcus luteus ATCC 10240	50-100	good-luxuriant	negative reaction
Neisseria meningitidis ATCC 13090	50-100	good-luxuriant	negative reaction
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant	negative reaction

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.Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone
2.MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
3.Brewer J. H., 1940, Jour. Amer. Medi. Assoc., 115, 598
4.Brewer J. H., 1940, J. Bacteriol., 39, 10
5.Brewer J. H., 1943 J. Bacteriol., 46, 395
6.Vera H. D., 1944, J. Bacteriol., 47, 59

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