



Thiol Medium

M852

Thiol Medium is used for cultivation of organisms from body fluids and other materials containing Penicillin, Streptomycin and Sulphonamides.

Composition**

Ingredients	Gms / Litre
Proteose peptone	10.000
Yeast extract	5.000
Dextrose	1.000
Sodium chloride	5.000
Thiol compound	8.000
p-Amino benzoic acid (PABA)	0.050
Agar	1.000
Final pH (at 25°C)	7.1±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 in tubes or flasks to a depth of 6 cm for neutralization of Penicillin or in shallow layers for neutralization of Streptomycin. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Use within 4 days of preparation.

Principle And Interpretation

Thiol Medium is used for culturing microorganisms from body fluids and also other materials containing antibiotics like penicillin, streptomycin or sulphonamides. The efficacy of Thiol Medium to retain viability of *Vibrio* was initially described by Huddleson (1). The ability of Thiol Medium to neutralize antibacterials was demonstrated by Christensen (2). This media can also be used for the cultivation and maintenance of *Haemophilus*, *Vibrio* and Meningococci (1).

Proteose peptone and yeast extract provide nitrogenous compounds, vitamin B complex and other essential growth nutrients. Dextrose is the energy source. The small quantity of agar keeps the oxido-reductive potential quite congenial for the growth of aerobic, microaerophilic and anaerobic microorganisms. p-Amino benzoic acid serves as a preservative.

10 ml of Thiol Medium has capacity to nullify 100 units of penicillin and 1000 units of streptomycin supporting good growth of Staphylococci and other test organisms. Even dilute inocula of the test organisms can initiate and result in good growth within 24 hours. For testing, medium is prepared and tested with and without concentrations of 5, 100 and 1000 units of penicillin and 100, 1000 and 10,000 micrograms of streptomycin per 10 ml of tube. It is further inoculated with test organisms and incubated at 18 - 48 hours at 35-37°C

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Viscous, comparable with 0.1% Agar gel.

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent solution.

Reaction

Reaction of 3.0% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH

6.90-7.30

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours. Growth observed after addition of antibiotic concentrations upto 100 units of Penicillin or 1,000 micrograms of Streptomycin.

Cultural Response

Organism	Inoculum (CFU)	Growth
Cultural Response <i>Neisseria meningitidis</i> ATCC 50-100 13090		poor-fair
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant
<i>Streptococcus pneumoniae</i> ATCC 6303	50-100	good-luxuriant
<i>Streptococcus pyogenes</i> 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. Huddleson I. F., 1948, J. Bacteriol., 56:508.
2. Christensen D. H., 1947, Presented at the Michigan Branch, Society of American Bacteriologists, Detroit, Mich, December 12, 1947.

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