T2117 Thiol broth

Thiol Broth is used for cultivation of microorganisms from body fluids and other materials containing antibacterials such as Penicillin, Streptomycin or Sulphonamides.

Composition:

Ingredients	Grams/Litre
Proteose peptone	10.0
Yeast extract	5.0
Dextrose	1.0
Sodium chloride	5.0
Thiol compound	8.0
p-Amino benzoic acid	0.05

Final pH 7.1 +/- 0.2 at 25°C

Store prepared media below 8°C, protected from direct light. Store dehydrated powder in a dry place in tightly-sealed containers at 2-25°C.
Appearance: Off-white to yellow coloured, homogeneous, free flowing powder.
Colour and Clarity: Clear to slightly opalescent, very light to light yellow colored solution.

Directions:
Suspend 29 grams of Thiol Broth in 1000 ml of distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes or erlenmeyer 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.

Principle and Interpretation:
Thiol broth is used for cultivating microorganisms from body fluids and other materials containing Penicillin, Streptomycin and Sulphonamides. With the enrichment, Haemophilus influenzae, Meningococci, Vibrio fetus etc. can be satisfactorily isolated, cultivated and maintained (1). These cultures remain viable in this medium for a longer time even without the subculture or transfer. It has been reported by Szawatkowski (2) and Shanson and Barnicoat (3) that Thiol broth are superior in supporting growth of Bacteroides species in blood cultures. It has also been reported as a specific medium for anaerobic bacteria in blood cultures (4).
Proteose peptone, yeast extract provides nitrogenous compounds, vitamin B complex and other essential growth nutrients. Dextrose is the energy source. p-Aminobenzoic acid acts as a preservative. 10 ml of Thiol Medium has capacity to nullify 100 units of Penicillin and 1000 micrograms of Streptomycin supporting good growth of Staphylococci and other test organisms as reported by Christensen (5). Even the dilute inocula of the test organisms can also 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.

Cultural characteristics after 18-48 hours at 35°C.

Organisms (ATCC)	Growth*
Staphylococcus aureus (25923)	+++
Streptococcus pneumoniae (6303)	+++
Streptococcus pyogenes (19615)	+++
Neisseria meningitidis (13090)	+/++

* Antibiotic concentrations upto 100 units of Penicillin or 1’000 µg of streptomycin.

References:

1. Huddleson, J. Bacteriology., 56, 508 (1948)
2. Szawatkowski, Med. Lab. Sci, 33, 5 (1976)
3. Shanson and Barnicoat. J.Clin. Pathol. 28, 407 (1975)
4. Murray, Baron, Pfaller,Tenover and Yolken (ed.) 1999.Manual of Clinical Microbiology,7th ed. American Society for Microbiology,Washngton, D.C.
5. Christensen, Presented at the Michigan Branch, Society of American Bacteriologists, Detroit, Mich, (1947)
6. American Type Culture Collection, Manassas, Va. U.S.A

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.