Thiobacillus Agar

M788

Thiobacillus Agar is recommended for isolation and cultivation of *Thiobacillus* species.

Composition**

Ingredients	Gms / Litre
Ammonium sulphate	0.400
Monopotassium phosphate	4.000
Calcium chloride	0.250
Ferrous sulphate	0.010
Magnesium sulphate	0.500
Sodium thiosulphate	5.000
Agar	12.500

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 22.66 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

The genus *Thiobacillus* is also known under the name of *Acidithiobacillus* . *Thiobacillus* are obligate autotrophic organisms, as they require organic carbon both as an electron and carbon source. Thiobacilli produce high quantity of sulphuric acid as a byproduct during oxidation of thiosuphates, sulphur and related inorganic sulphur-containing compounds to generate metabolic energy. *Thiobacillus* , by its production of sulphuric acid is involved in the destruction of concrete sewers and the acid corrosion of metals (2).

Thiobacillus Agar is a modification of formulation described by Starkey (1) and is used for the isolation and maintenance of *Thiobacillus* species.

The medium contains three inorganic sulphates and a thiosulphate. Phosphate serves as a buffer while sodium chloride maintains the osmotic balance of the medium.

Samples are inoculated into Thiobacillus Broth. After incubation at 25-30°C for about 7 days or more, turbidity or sulphur precipitation on the surface of the liquid or against the walls ofthe flasks, indicates growth of bacteria. Isolation is subsequently done on Thiobacillus Agar. *Thiobacillus* forms small sulphur impregnated colonies with clear zones, indicating acid formation from thiosulphate oxidation.

Quality Control

Appearance
White to cream homogeneous free flowing powder

Gelling
Firm, comparable with 1.25% Agar gel.

Colour and Clarity of prepared medium
Light amber coloured clear to slightly opalescent gel forms in Petri plates.

Cultural Response
Cultural characteristics observed after an incbatiuon at 25-30°C for upto 7 days.

Organism	Growth
Cultural Response	
Thiobacillus thioparus ATCC 8158	luxuriant

Thiobacillus thiooxidans luxuriant
ATCC 8085

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.Starkey R. L., 1935, Science, 39:197.
2.Eaton A. D., Clesceri L. S. and Greenberg A. E., (Ed.), 1995, Standard Methods for the Examination of water and Wastewater, 19th Ed., American Public Health Association, Washington, D.C.

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