Actinomycete Isolation Agar

M490

Actinomycete Isolation Agar is used for isolation and propagation of *Actinomycetes* from soil and water.

Composition**

Ingredients	Gms / Litre
Sodium caseinate	2.000
L-Asparagine	0.100
Sodium propionate	4.000
Dipotassium phosphate	0.500
Magnesium sulphate	0.100
Ferrous sulphate	0.001
Agar	15.000
Final pH (at 25°C)	8.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 21.70 grams in 1000 ml distilled water containing 5 ml glycerol. Heat to boiling to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Actinomycetes are gram-positive bacteria, which show marked chemical and morphological diversity but form a distinct evolutionary line of organisms that range from coccoid and pleomorphic forms to branched filaments (1). *Actinomycetes* form an integral part of soil, water and vegetation. *Actinomycete* development leads to the formation of volatile metabolites (2). Traces of these volatile metabolites are sufficient to impart disagreeable odour to water or a muddy flavour to fish (3). *Actinomycetes* also cause disruptions in wastewater treatment by forming massive growths, which are capable of producing thick foam in the activated sludge process (4, 5). Actinomyces Isolation Agar used for isolation and propagation of *Actinomycetes* from soil and water was formulated by Olsen (6).

Actinomycete Isolation Agar contains sodium caseinate as nitrogen source. Asparagine in addition to being an amino acid is also a source of nitrogen. Sodium propionate is used as a substrate in anaerobic fermentation. Dipotassium phosphate provides the buffering system. The sulphates serve as source of sulphur and metallic ions. Glycerol serves as an additional source of carbon.

Inoculate the plates with 1 drop of diluted culture or specimen and spread over the surface using a sterile bent glass rod. Incubate at 35-37°C for 40-72 hours. The media can be used for long term storage after sufficient growth is obtained. Agar slants are used for maintenance of cultures over a shorter period of time.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Yellow to light amber coloured opalescent gel forms in Petri plates

Reaction
Reaction of 2.2% w/v aqueous solution containing 0.5%v/v glycerol at 25°C. pH : 8.1±0.2

pH
7.90-8.30

Cultural Response
M490: Cultural characteristics observed after an incubation at 35-37°C for 40-72 hours.

Organism	Growth

Nocardia asteroides ATCC 19427	good-luxuriant
Escherichia coli ATCC 25922	inhibited
Streptomyces albus subsp albus ATCC 3004	good-luxuriant
Streptomyces lavendulae ATCC 19247	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 label.

Reference

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3. Eaton A. D., Clesceri L. S. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
4. Lechevalier H. A., 1975, Environ. Protection Technol. Ser., EPA-600/ 2-75-031, U. S. Environmental Protection Agency, Cincinnati, Ohio.
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