Algae Culture Agar

M343

Intended Use

Recommended for isolation and cultivation of algae from soil, water and sewage. Also for carrying stock cultures of algae used in the bioassay of algicidal chemicals.

Composition**

Ingredients	Gms / Litre
Sodium nitrate	1.000
Dipotassium hydrogen phosphate	0.250
Magnesium sulphate	0.513
Ammonium chloride	0.050
Calcium chloride	0.058
Ferric chloride	0.003
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 16.87 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Algae (singular alga) encompass several groups of relatively simple living aquatic organisms that capture light energy through photosynthesis, using it to convert inorganic substances into organic matter. Algae range from single-cell organisms to multicellular organisms, some with fairly complex differentiated form and (if marine) called seaweeds. Algae are usually found in damp places or water bodies and thus are common in terrestrial as well as aquatic environments. Various algae play significant roles in aquatic ecology. Algae are used by humans in a number of ways. Because many species are aquatic and microscopic, they are cultured in clear tanks or ponds and either harvested or used to treat effluents pumped through ponds (4,7). Algae Culture Agar is recommended for the isolation and cultivation of algae from soil, water and sewage. Algae Culture Agar is used for maintaining stock cultures of algae used in the bioassay of algaecide chemicals. It is a slight modification of the formula of Allen (1). Fitzgerald (3) recommended it for the cultivation of algae. The medium provides all necessary nutrients for good growth of algae but does not provide for other than minimal growth of bacteria and fungi. Stock cultures are prepared by inoculating the surface of slants with the algal culture and incubation at room temperature under a suitable light source. These stock cultures can be maintained for several months.

Type of specimen

Water samples: Wastewater, Soil sample

Specimen Collection and Handling

For water samples follow appropriate techniques for handling specimens as per established guidelines (5,6).
For soil samples, follow appropriate techniques for sample collection and processing as per guidelines (8).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1.This medium is general purpose medium and may not support the growth of fastidious organisms.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Off-white to light yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

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

Reaction
Reaction of 1.69% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
Cultural characteristics observed under suitable light source after an incubation at 20-25°C within 1 week.

Organism	Inoculum (CFU)	Growth
Chlorella pyrenoidosa ATCC 50476	50-100	good-luxuriant

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference

1. Allen, 1952, Arch. Microbiol., 17:34.
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3. Fitzgerald, 1962, Water and Sewage Works, 109:361.
4. Guiry M. D. and Blunden G., (Ed.), 1991, Seaweed Resources in Europe: Uses and Potential. John Wiley and Sons Ltd.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
7. Lembi C. A. and Waaland J. R., (Ed.), Algae and Human Affairs, 1988, Cambridge University Press.
8. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.

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