



Chlorella Agar

M768

Intended Use:

Recommended for the isolation and maintenance of *Chlorella* species.

Composition**

Ingredients	Gms / Litre
Copper sulphate	0.000078
Sodium molybdate	0.00005
Zinc sulphate	0.00022
Boric acid	0.00028
Manganese sulphate	0.0014
Ferrous sulphate	0.0015
Potassium citrate	0.032
Potassium sulphate	0.217
Magnesium sulphate	2.400
Potassium dihydrogen phosphate	2.450
Potassium nitrate	2.500
Dextrose (Glucose)	10.000
Agar	17.000
Final pH (at 25°C)	4.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 34.6 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

Chlorella is a genus of single-celled green algae, belonging to the phylum Chlorophyta. *Chlorella* contains the green photosynthetic pigments chlorophyll-a and chlorophyll b in its chloroplast. It depends on photosynthesis for growth and multiplies rapidly, requiring only carbon dioxide, water, sunlight, and a small amount of minerals. *Chlorella* has been researched as a potential source of food and energy, because its efficiency of photosynthesis can reach 8%, (6) which is comparable with other highly efficient crops such as sugarcane. *Chlorella* media were originally formulated by Shrift (4) and further modified for cultivation and maintenance of *Chlorella* species.

All algae utilize inorganic phosphates and sulphates. There is a fairly high requirement of molybdate as a trace metal in nitrogen fixation. Algae require calcium, magnesium, potassium and probably sodium. Most algae grow poorly on agar and it is best to let them become established in liquid culture before adapting them to the more rigorous conditions of an agar slant.

Chlorella being photosynthetic green algae, should be cultivated in the presence of light. Bright diffuse light; fluorescent light and sunlight are satisfactory sources of light for the growth of *Chlorella*. The inoculated tubes/flasks should be incubated in the presence of light at 25-27°C for a week to permit good growth and pigmentation (3). *Chlorella* cultures can be maintained at room temperature for 2-3 months without subculturing.

Type of specimen

Soil sample

Specimen Collection and Handling:

For soil samples follow appropriate techniques for handling specimens as per established guidelines (5).

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

White to cream homogeneous free flowing powder

Gelling

Firm, comparable with 1.7% Agar gel.

Colour and Clarity of prepared medium

Amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.46% w/v aqueous solution at 25°C. pH : 4.5±0.2

pH

4.30-4.70

Cultural Response

Cultural characteristics observed in presence of light,after an incubation at 25-27°C for 7 days.

Organism

Growth

Chlorella vulgaris ATCC
9765

good-luxuriant

Euglena gracilis ATCC
12716

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. Use before expiry date on the label.

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 (1,2).

Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. 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.
3. Norris J. R. & Ribbons D. W., (Ed.), 1963, Methods in Microbiology, Volume 3B, Academic press, London, pg. 269.
4. Shrift, 1954, Am. J. Botany, 41:223-230.
5. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.
6. Zelitch I., Photosynthesis, Photorespiration and Plant Productivity, Academic Press, 1971, p.275.

Disclaimer :

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