

CM 20412 – CHLORELLA AGAR

INTENDED USE

For the isolation and maintenance of Chlorella species.

PRODUCT SUMMARY AND EXPLANATION

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%, which is comparable with other highly efficient crops such as sugarcane. Chlorella media were originally formulated by Shrift 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. Chlorella cultures can be maintained at room temperature for 2-3 months without subculturing.

COMPOSITION

| Ingredients | Gms / Ltr |
|--------------------------------|-----------|
| Copper sulphate | 0.0000078 |
| 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 |

PRINCIPLE

The medium contains phosphates and sulphates which helps in growth of algae. The medium provides high requirement of molybdate as a trace metal in nitrogen fixation. For the growth of algae the medium provides calcium, magnesium, potassium and probably sodium.

INSTRUCTION FOR USE



Dissolve 34.6 grams in 1000 ml purified / distilled water.
Heat to boiling to dissolve the medium completely.
Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : White to cream homogeneous free flowing powder.
Appearance of prepared medium : Amber coloured, clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 4.5±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Recovery | Incubation Temperature | Incubation Period |
|---------------------------|-------|-------------------|----------------|----------|------------------------|-------------------|
| <i>Chlorella vulgaris</i> | 9765 | 50-100 | Good-luxuriant | >=50% | 25-27°C | 7 Days |
| <i>Euglena gracilis</i> | 12716 | 50-100 | Good-luxuriant | >=50% | 25-27°C | 7 Days |

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.










DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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.



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|---|---|--|--|---|
|  GMP Good Manufacturing Practices Certified |  Best Before |  QTY. Quantity |  REF Catalogue Number |  Manufacturer |
|  Temperature Unit |  LOT/ B. NO. Lot / Batch Number |  Consults Instructions for Use |  QR Code | |

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.
*For LabUse Only

