C.T. Agar

M1349

Intended Use:

Recommended for cultivation of *Myxobacteria* species.

Composition**

Ingredients	Gms / Litre
Tryptone	20.000
Magnesium sulphate heptahydrate	2.000
Potassium phosphate buffer (0.02M, pH 7.6)	0.725
Agar	20.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 41.71 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

The *Myxobacteria* (slime bacteria) are a group of bacteria that predominantly live in the soil. They produce a number of biomedically and industrially useful chemicals, such as antibiotics that are secreted extracellularly (5). They typically travel in swarms (also known as wolf packs), containing many cells kept together by intercellular molecular signals. This close concentration of cells may be necessary to provide a high concentration of extracellular enzymes used to digest food. C.T. Agar was originally described by Dworkin (1) for accurate viable count of *Myxobacteria.* A distinctive feature of *Myxobacteria* is that when cells on the surface of a solid medium are deprived of specific nutrients, they shift from growth to development and begin to migrate, by means of gliding motility, into aggregation centers (2). C.T. Agar is used to maintain *Myxobacteria* to study their gliding motility. All *Myxobacteria* rely to a large extent on peptides and amino acids for nitrogen, carbon and energy. Tryptone provides the nutrients required for growth of *Myxobacteria*. The phosphate buffer helps to maintain pH of the medium. Due to this the culture can be maintained for a longer time on the Petri plates.

Type of specimen

Soil samples.

Specimen Collection and Handling:

For soil samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (6). 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. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Further biochemical and serological tests must be carried out for further identification.

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
Cream to yellow homogeneous free flowing powder

Gelling
Firm,comparable with 2.0% agar gel.

Colour and Clarity of prepared medium
Yellow coloured, opalescent gel forms in Petri plates

Reaction
Reaction of 4.27% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH
7.40-7.80

Cultural Response
Cultural characteristics observed after an incubation at 30-35°C for 1-4 weeks.

Organism	Growth
Myxococcus fulvus ATCC 23093	good
Myxococcus xanthus ATCC 25232	good

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 (3,4).

Reference

1. Dworkin M., 1962, J. Bacteriol., 84: 250-257.
2. Dworkin M., 1963 J. Bacteriol., 86; 67-72.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. 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.
5. Reichenback H., 2001, J. Ind. Microbiol. Biotechnol., 27 (3) : 149
6. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.

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