



Casitone Glycerol Yeast Autolysate Broth Base(CGY)

M381

Casitone Glycerol Yeast Autolysate (CGY) Broth is used as a maintenance medium for iron bacteria, especially those belonging to the *Sphaerotilus-Leptothrix* group.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Yeast autolysate	1.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 6 grams in 1000 ml distilled water containing 10ml glycerol. Dispense into test tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. If desired 1.5% agar may be added to form CGY Agar.

Principle And Interpretation

Iron bacteria are considered to be capable of metabolizing reduced iron present in their aqueous habitat and of depositing it in the form of hydrated ferric oxide on or in their mucilaginous secretions. *Sphaerotilus natans* belonging to the *Sphaerotilus* genus normally occurs in polluted waters. In unpolluted water containing iron, iron hydroxide may be deposited in or on the sheaths, which turn yellow-brown and may become encrusted with ferric ions. Individual cells, under some environmental conditions, accumulate large amounts of poly-β-hydroxy butyrate (4).

CGY Broth is formulated in accordance with APHA (1) and it supports growth of Iron bacteria especially those belonging to the *Sphaerotilus-Leptothrix* group but not of the more rapidly growing organisms.

Pure cultures are isolated from BOD-Lactate Broth by picking a filament and streaking on 0.05% Meat Extract Agar. BOD-Lactate Broth acts as a partially selective medium for *Sphaerotilus* (2). After 24 hours incubation at 25°C, the typical curling filaments are transferred to CGY Broth, which is a good maintenance medium (3). If a pellicle with no underlying turbidity develops in 2 to 3 days, filament is transferred to CGY Agar slant. In addition alfalfa straw or pea straw may be used for enrichments.

Quality Control

Appearance

Off-white to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured, clear solution without any precipitate

Cultural Response

M381: Cultural characteristics observed after an incubation at 25-30°C for upto 3 days.

Organism

Growth

Cultural Response

Sphaerotilus natans ATCC 13338 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 the label.

Reference

1. Andrew E. D., Rice E. W., Greenberg A. E. and Clesceri L. S., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
2. Armbuster E. H., 1969, Appl. Microbiol., 17:320.
3. Dondero N. C., Philips R. A. and Heukelekian H., 1961, Appl. Microbiol., 9:219

4. Pelczar M. J. Jr., Reid R. D., Chan E. C. S., 1977, Microbiology, 4th Edi, Tata McGraw-Hill Publishing Company Ltd, New Delhi.

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