ARENA BioScien

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Cetrimide Agar

Selective medium used for the isolation and identification of *Pseudomonas aeruginosa*

REF: BS.1/CT01.100.0100	100 Gram	REF: BS.1/CT01.250.0250	250 Gram
REF: BS.1/CT01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Cetrimide Agar is primarily used for the selective isolation and identification of *Pseudomonas aeruginosa* from clinical and nonclinical specimens. *Pseudomonas aeruginosa* causes between 10% and 20% of infections in most hospitals. Pseudomonas infection is especially prevalent among patients with burn wounds, cystic fibrosis, acute leukemia, organ transplants, and intravenous-drug addiction. *P. aeruginosa* is a common nosocomial contaminant, and epidemics have been traced to many items in the hospital environment. Patients who are hospitalized for extended periods are frequently colonized by this organism and are at increased risk of developing infection. The most serious infections include malignant external otitis, endophthalmitis, endocarditis, meningitis, pneumonia, and septicemia.

METHOD PRINCIPLE

Pseudomonas aeruginosa produces a number of water soluble iron chelators, including the yellow-green or yellow-brown fluorescent pyoverdin. When pyoverdin combines with the blue water-soluble pyocyanin, the bright green colour which is characteristic feature of *Pseudomonas aeruginosa* is created. Peptone provides necessary nutrients for P. aeruginosa such as nitrogen, vitamins, and carbon. The addition of magnesium chloride and potassium sulphate stimulates pyocyanin and pyoverdin (fluorescein) production. Cetyltrimethylammonium bromide (Cetrimide) is a selective agent and also inhibits most bacteria by acting as a detergent. When it gets in contact with bacteria, it causes the release of nitrogen and phosphorous from the bacterial cell other than *Pseudomonas aeruginosa*. Glycerol is added as a source of carbon. Agar acts as a solidifying agent.

MEDIA COMPOSITION

Item	Formula per liter of medium
Peptone from gelatin	20 gm
Dipotassium Sulfate	10 gm
Magnesium Chloride	1.4 gm
Cetyltrimethylammonium Bromide	0.3 gm
Agar	13.6 gm

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the Cetrimide Agar material safety data sheet.

STORAGE AND STABILITY

BioScien Cetrimide Agar should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a 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.

Final pH 7.2±0.2 at 25°C

PREPARATION

Suspend 45.3 grams in 1000 ml distilled water containing 10 ml glycerol. 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.

Deterioration

The color of ***BioScien*** Cetrimide Agar is cream to yellow homogeneous free flowing powder. Prepared Media is light amber in color. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

Clinical samples - Blood, urine, pus, sputum and drains.
Water Samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile Petri dishes
- Incubator
- Autoclave

Performance Characteristics

Cultural characteristics was observed after an incubation at 30-35°C for 18-72 hours

Microorganisms	Growth
Pseudomonas aeruginosa ATCC 9027	luxuriant
Pseudomonas aeruginosa ATCC 27853	luxuriant
Pseudomonas aeruginosa ATCC 25668	Luxuriant
Salmonella Typhimurium ATCC 14028	Inhibited
Staphylococcus aureus subsp.aureus ATCC 25923	Inhibited
Escherichia coli ATCC 25922	Inhibited

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

1.King, Ward and Raney, 1954, J. Lab. Clin. Med., 44:301.
2.Lowbury, 1951, J. Clin. Pathol., 4:66
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4.Brown and Lowbury, 1965, J. Clin. Pathol., 18:752.
5.Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation Identification -Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
7. King EO, Ward MK, Raney EE. Two simple media for the demonstration of pyocyanin and fluorescein. J Lab Clin Medicine 1954; 44: 301.
8. https://pubmed.ncbi.nlm.nih.gov/6405475/

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number	⚠	Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		