



Technical Data

CPC Agar Base w/ 1% Cellobiose

M1241F

Intended use

CPC Agar Base w/1% Cellobiose is used for the cultivation and identification of *Vibrio* species from foods in accordance with FDA BAM, 1998.

Composition**

Ingredients	Gms / Litre
Peptone	10.000
HM peptone B#	5.000
Cellobiose	10.000
Sodium chloride	20.000
Bromothymol blue	0.040
Cresol red	0.040
Agar	15.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

-Equivalent to Beef extract

Directions

Suspend 60.08 grams in 1000 ml of 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 and aseptically add the rehydrated contents of 1 vial of Modified CPC Supplement (FD110F) or Colistin Supplement (FD298). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Vibrio species are natural inhabitants of brackish and salt water. Human disease is associated with ingestion of contaminated water or consumption of contaminated seafood. Wound and systemic infections develop following contact with contaminated water (4). CPC (Cellobiose, Polymyxin and Colistin) Agar Base w/1% cellobiose, is formulated in accordance with FDA BAM (5) for the differentiation of *Vibrio vulnificus* from other *Vibrio*'s (1). *Vibrio cholerae* strains except *V.cholerae* 01-classical biotype grow on CPC Agar while most *Vibrio parahaemolyticus* strains do not grow on CPC Agar. If growth occurs, colonies appear green purple coloured due to lack of cellobiose fermentation. CPC Agar contains HM peptone B and peptone which supply the essential nitrogenous compounds to the growing *Vibrio*'s. Cellobiose is fermented by some *Vibrio*'s producing acid and is indicated by the pH indicator bromothymol blue, which turns yellow at acidic pH. Cresol red is the pH indicator of alkaline range, which turns red at alkaline pH. Alkaline pH of the medium enhances the recovery of *Vibrio*'s.

Blend approximately 25 grams of food sample with 225 ml Alkaline Peptone Water and incubate at 35 ±2°C for 6 to 8 hrs to overnight depending on the sample. Transfer a loopful culture from this to the surface of the dried plates of CPC Agar Base w/1% cellobiose (M1241F) with Modified CPC Supplement (FD110F) for mCPC Agar or Colistin Supplement (FD298) for CC Agar; incubate at 39 - 40°C for 18 to 24 hours. Typical colonies of *V. cholerae* are small, smooth, opaque and green to purple in colour as the medium contains two pH indicators viz. bromothymol blue and cresol red. A purple background will also be developed upon extended incubation. Biochemical tests are performed to confirm the organisms.

Type of specimen

Food samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1). 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. Due to nutritional variations, some strains may show poor growth on this medium.

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

Light yellow to light brown homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Olive-green to light brown coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 6.01% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH

7.40-7.80

Cultural Response

Cultural characteristics observed with added Modified CPC Supplement (FD110F) or Colistin Supplement (FD298) after an incubation at 39-40°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Vibrio cholerae</i> ATCC 15748	50-100	good - luxuriant	≥50%	green-purple
<i>Vibrio parahaemolyticus</i> ATCC 17802	≥10 ⁴	inhibited	0%	
<i>Vibrio vulnificus</i>	50-100	good - luxuriant	≥50%	yellow

Storage and Shelf Life

Store between 10-30°C in a tightly 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 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. Bacteriological Analytical Manual, 8th Edition, Revision A, 1998.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
3. 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.
4. Murray P.R., Baron J.H., Pfaller M.A., Jorgensen J.H. and Tenover F.C., (Ed), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
5. Salfinger Y., and Tortorello M.L. 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

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