Technical Information

CPC Agar Base w/ 1% Cellobiose

Product Code: DM 2241F

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

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Beef extract	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

Principle & 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 (1). CPC (Cellobiose, Polymyxin and Colistin) Agar Base w/1% cellobiose, is formulated in accordance with FDA BAM (2) for the differentiation of *Vibrio vulnificus* from other *Vibrios* (3). *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 beef extract and peptic digest of animal tissue, which provides the essential nitrogenous compounds to the growing *Vibrios*. Cellobiose is fermented by some *Vibrios* 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 *Vibrios*.

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

(DM 2241F) with Modified CPC Supplement (MS 2110F) for CPC Agar or Colistin Supplement (MS 2298) 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.

Methodology

Suspend 30.04 grams of dehydrated media in 500 ml of distilled water. Mix thoroughly & 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 (MS 2110F) or Colistin Supplement (MS 2298). Shake well before pour into sterile Petri plates.

Quality Control

Appearance
Light yellow to light brown homogeneous free flowing powder

Gelling
Firm,comparable with 1.5% Agar gel

Colour and Clarity
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 Range
7.40-7.80

Cultural Response
DM 2241F: Cultural characteristics observed with added Modified CPC Supplement (MS 2110F) or Colistin Supplement (MS 2298) after an incubation at 39-40°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Cultural Response				
Vibrio cholerae ATCC 15748	50-100	good - luxuriant	>=50%	green-purple
Vibrio parahaemolyticus ATCC 17802	>=10^3	inhibited	0%	
Vibrio vulnificus	50-100	good – luxuriant	>=50%	yellow

Storage and Shelf Life

Dried Media: Store below 10-30°C in tightly closed container and prepared medium below 2-8°C. Use before expiry period on label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Murray P.R., Baron J.H., Pfaller M.A., Jorgensen J.H. and Yolken R.H., (Ed),2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
2. Vanderzant C. and splittstoesser D.F., (Eds),1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington DC.
3. Bacteriological Analytical Manual,8th Edition, Revision A,1998.

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