Technical Information

CPC Agar Base

Product Code: DM 2241

Application: - CPC Agar Base is recommended for the cultivation and identification of *Vibrio* species from foods.

Composition**

Ingredients	Gms / Litre
Peptone	10.000
Meat extract B #	5.000
Cellobiose	15.000
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

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 formulated as per APHA (2) is recommended for the cultivation and identification of *Vibrio* species from foods. CPC Agar is a selective and differential agar medium, designed to differentiate *Vibrio vulnificus* from other *Vibrios* (2). *Vibrio cholerae* strains except *V.cholerae* 01-classical biotype grow on CPC Agar while most *Vibrio parahaemolyticus* strains do not grow on CPC Agar.

CPC Agar contains meat extract B and peptone, which provide the essential nitrogenous, carbonaceous compounds, long chain amino peptides, vitamins and other growth nutrients to *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 (DM 1618). Transfer a loopful from the surface growth of either Alkaline Peptone Water (DM 1618) or Gelatin Phosphate Salt Broth to the surface of the dried plates of CPC Agar. Streak in a manner that will yield isolated colonies. Incubate CPC Agar at 40 - 42°C for 18 to 24 hours.

Typical colonies of *V. cholerae* on CPC Agar are small, smooth, opaque and green to purple in colour as CPC Agar contains two pH indicators viz. bromothymol blue and cresol red. A purple background will also develop in the CPC Agar upon extended incubation.

Methodology

Suspend 32.54 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 CPC Supplement (MS 2110). 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 6.5% w/v aqueous solution at 25°C. pH : 7.6±0.2

Ph Range
7.40-7.80

Cultural Response
DM 2241: Cultural characteristics observed after an incubation at 40±2°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 the 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

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