

Technical Information

Campylobacter Cefex Agar Base

Product Code: DM 2267

Application: - Campylobacter Cefex Agar Base is recommended for the isolation and cultivation of *Campylobacter* species.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Peptic digest of animal tissue	10.000
Sodium chloride	5.000
Yeast extract	2.000
Glucose	1.000
Ferrous sulphate	0.500
Sodium pyruvate	0.500
Sodium bisulphite	0.350
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Campylobacter Cefex Agar Base is used for isolation and cultivation of *Campylobacter* species (1). Campylobacter Agar with antimicrobics and 50 ml sheep blood is recommended as a selective medium for the primary isolation and cultivation of *Campylobacter* species. Campylobacter Cefex Agar Base is a highly nutritious base and the addition of horse blood supplements the medium with X-factor and other growth factor requirements (1).

Campylobacter species were associated with variety of veterinary diseases and also has been characterized as bacterial agents of human foodborne gastroenteritis. The organisms may also be transmitted by contaminated food or water.

Casein hydrolysate, peptic digest of animal tissue and yeast extract supply nitrogenous compounds, carbon, sulphur, vitamins and trace ingredients. Glucose is utilized as an energy source. Sheep blood supplies the X-factor (heme) and other growth requirements. Incorporation of antibiotics (MS2105) suppresses the growth of the normal microbial flora in the specimens thereby facilitating isolation of *Campylobacter* species. The addition of antimicrobials to the medium is required to suppress the growth of normal flora. Cefoperazone is added to prevent many gram-positive and gram-negative organisms (Aerobic and anaerobic). Cycloheximide is added to enhance the growth of contaminating fungi. Campylobacter Cefex Agar Base can be used for direct inoculation or indirect inoculation. After inoculation, incubate the plates at 42°C for 48-72 hours in microaerophilic atmosphere. In addition, media may be set up in duplicate with the second set incubated at 35-37°C to allow for the growth of certain *Campylobacter* species. *Campylobacter jejuni* colony morphology may appear as small mucoid, grayish flat colonies with irregular edges and no hemolytic patterns after 24-48 hours. Colonies may also appear pink or yellowish gray with some colonies exhibiting a tailing effect along the streak line (2). They may also appear as round, convex, entire, glistening, 1-2 mm in diameter.

Cephalothin-sensitive *Campylobacter* species such as *C. fetus* and *C. upsaliensis* may not be recovered on Campylobacter Cefex Agar Base because it contains cefoperazone (3). These agents in selective media may prevent some stains of desired species. Therefore, specimens cultured on selective media should also be cultured on non-selective media to obtain additional information and to insure recovery of potential pathogens.



Dehydrated Culture Media
Bases / Media Supplements

Methodology

Suspend 49.35 grams of dehydrated media in 950 ml 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 50°C. Aseptically add 50 ml defibrinated sheep blood or 5-7% v/v laked horse blood and rehydrated contents of one vial of Park and Sanders Selective Supplement II, (MS2105). Shake well before pour into sterile Petri plates.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity

Basal medium: Yellow coloured clear to slightly opalescent gel. After addition of blood: Cherry red coloured opaque gel forms in Petri plates

Reaction

Reaction of 4.94% w/v aqueous solution at 25°C. pH : 7.0±0.2

Ph Range

6.80-7.20

Cultural Response

DM2267: Cultural characteristics observed under microaerobic atmosphere with added 10%v/v defibrinated sheep blood or 5-7% v/v laked horse blood and Park and Sanders Selective Supplement II, (MS2105), after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response			
<i>Campylobacter jejuni</i> ATCC 29428	50-100	good-luxuriant	>=50%
<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	<=10%
<i>Enterococcus faecalis</i> ATCC 29212	50-100	none-poor	<=10%

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Atlas R. M., 1993, Handbook of Microbiological Media, Parks L.C. (Ed.), CRC press, Boca Raton
2. Forbes B. A. et al, 2002, Bailey and Scotts Diagnostic Microbiology, 11th Ed., Mosby Company, St. Louis, MO.
3. 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.

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