

Technical Information

Blood Free Campylobacter Selectivity Agar Base W/Yeast extract

Product Code: DM 1887F

Application: - Blood Free Campylobacter Selectivity Agar Base, w/ yeast extract is used for selective isolation and differentiation of *Campylobacter* species in accordance with FDA BAM, 1998.

Composition**

Ingredients	Gms / Litre
Meat extract B#	10.000
Peptone	10.000
Sodium chloride	5.000
Bacteriological charcoal	4.000
Yeast extract	2.000
Casein hydrolysate	3.000
Sodium deoxycholate	1.000
Ferrous sulphate	0.250
Sodium pyruvate	0.250
Agar	12.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Beef extract

Principle & Interpretation

Campylobacters are microaerophilic, very small, curved, thin, Gram-negative rods (1.5-5 µm), with corkscrew motility. It is considered to be one of the leading causes of enteric illness in the United States and other developed countries (1). The organism is reported to cause mild to severe diarrhea, with loose, watery stools often followed by bloody diarrhea. The infection together is called as campylobacteriosis. *Campylobacters* are carried in the intestinal tract of a wide variety of wild and domestic animals, especially birds and are frequent contaminants of foods of animal origin (2). Blood Free *Campylobacter* Selectivity Agar Base, w/ yeast extract is used for selective isolation and differentiation of *Campylobacter* species in accordance with FDA BAM, 1998(3). Initially blood was used in the isolation of *Campylobacter*. But, later it was reported by Bolton et al (4) that charcoal can be effectively used in place of blood. *Campylobacter* species are highly resistant to cefoperazone, an antibiotic which effectively suppresses growth of *Pseudomonas* and *Enterobacteriaceae* (5-7). Addition of cefoperazone increases the selectivity of the medium. Due to this addition, the medium is also known as *Campylobacter* Charcoal Differential Agar (CCDA). Charcoal, sodium pyruvate and ferrous sulphate reduces the aerobic tolerance of medium by quenching photochemically generated toxic oxygen derivatives (7). Peptone, casein hydrolysate and meat extract B serve as sources of essential nutrients and amino acids. Casein is added to help grow certain strains of nalidixic acid resistant thermophilic *Campylobacter* that are environmental organisms. Additional Amphotericin B in Blood Free *Campylobacter* Broth Base suppresses the growth of yeast and mold contaminants. Colonies tend to swarm when initially isolated from clinical specimens. According to the BAM protocol, samples are pre enriched if required with suitable media under micro aerobic conditions for appropriate time at 37°C. These enriched cultures are further proceeded for isolation, identification and confirmation. For isolation, appropriately diluted samples are inoculated into either Heart Infusion Yeast Extract Agar Base (DM1169F + MS 2294 and/ or MS2009) or Bloodfree *Campylobacter* Selectivity Agar Base, w/ yeast extract (DM1887F + MS2135F). Plates are incubated at 37-42°C under anaerobic conditions away from light. *Campylobacter* colonies on agar appear as round to irregular with smooth edges. They can show thick translucent white growth to spreading, film-like transparent growth. These are further confirmed using microscopy and biochemical tests.

Methodology

Suspend 47.5 grams in 1000 ml 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 rehydrated contents of 1 vial of CCDA Supplement (MS2135F). Mix well and pour into sterile Petri plates.

Quality Control

Appearance

Grey to black homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel

Colour and Clarity of prepared medium

Black coloured, opaque gel forms in Petri plates

Cultural Response

Cultural characteristics observed with added CCDA Supplement (FD135F), after an incubation at 42°C for 24-48 hours.

Cultural Response

Organism	Growth	Inoculum (CFU)	Recovery	Colour of colony
Cultural Response				
<i>Campylobacter jejuni</i> ATCC 29428	good-luxuriant	50-100	≥50%	grey
<i>Campylobacter laridis</i> ATCC 35222	good-luxuriant	50-100	≥50%	varying type
<i>Escherichia coli</i> ATCC 25922	inhibited	≥10 ³	0%	
<i>Campylobacter coli</i> ATCC 33559	good-luxuriant	50-100	≥50%	creamy-grey

Storage and Shelf Life

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

Further Reading

1. Tauxe, R.V., Hargrett-Bean, N., Patton, C.M. and Wachsmuth, I.K. 1988. Morbid. Mortal. Weekly Rep., 37: 1-13.
2. Downes, F.P. and Ito, K. 2001. Methods For The Microbiological Examination of Foods. APHA, Food 4 ed. Washington, D.C.
3. FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
4. Bolton, F. J., Hutchinson, D. N. and Coates, D. 1984. J. Clin. Microbiol, 19.
5. Ahonkai, V. I. 1981. Antimicrob. Agents. Chemother, 20.
6. Jones, R. N 1980. Antimicrob. Agents. Chemother, 17.
7. Karmali, M. A. 1986. J. Clin. Microbiol, 23.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.
- Do not use the products if it fails to meet specifications for identity and performance parameters.