Campy-Cefex Agar

Intended Use

Campy-Cefex Agar* is a selective medium used for the primary isolation and cultivation of *Campylobacter* species, especially *C. jejuni* and *C. coli*, from poultry.

** U.S. Patent No. 5,891,709*

Summary and Explanation

In 1992, Stern et al. published on the development of Campy-Cefex Agar, a selective-differential medium for the isolation of *Campylobacter* species from chicken carcasses. Campy-Cefex Agar demonstrated easier differentiation of *C. jejuni* from other flora when compared to Campylobacter Cefoperazone Desoxycholate Agar and better selectivity than Campylobacter Brucella Agar (Campy BAP).[1]

In September 2005, Campy-Cefex Agar was adopted by the National Advisory Committee on Microbiological Criteria for Foods for the isolation of *Campylobacter* species from chicken carcasses.[2]

Principles of the Procedure

This medium consists of Brucella Agar, a general purpose medium that supports the growth of *Campylobacter* species. Laked horse blood provides additional nutrients. Antimicrobial agents are incorporated to suppress the growth of normal fecal flora that could mask the presence of *C. jejuni*. Cefoperazone is a cephalosporin antibiotic that suppresses the growth of gram-negative enteric bacilli and some gram-positive species. Cycloheximide is used to suppress the growth of fungi.

Sample Collection and Handling

For agrifood samples consult appropriate standard methods for details on sample preparation and processing according to sample type.[3,4]

Procedure

Inoculate the sample as soon as possible after it is received in the laboratory, by means of a swab, directly onto the agar surface and streak the plate for isolation. Incubate inoculated plates, protected from light, at 42°C in a reduced oxygen, increased carbon dioxide atmosphere. This atmosphere can be achieved by using the **BD GasPak**™ EZ Campy Container System with sachets or the **BD GasPak** EZ Campy Pouch System with sachets. Examine plates after 36-48 hours incubation.[1]

Expected Results

Colonies of *Campylobacter* appear translucent. Direct examination using phase-contrast microscopy (x1000) can be used to confirm typical morphology and motility – curved or spiral-shaped bacterial rods that may demonstrate a rapid corkscrew-like movement. Suspect colonies that demonstrate the described colonial and microscopic morphology, and are catalase and oxidase positive, can be presumptively identified as *Campylobacter* species.[1,5]

Limitations of the Procedure

1. Since *C. jejuni* is thermophilic, it is important to incubate the plates at 42°C; otherwise growth will be delayed. Also, the higher temperature improves selectivity by inhibiting the normal flora.
2. For identification, organisms must be in pure culture. Morphological, biochemical, and/or serological tests should be performed for final identification. Consult appropriate texts for detailed information and recommended procedures.[2-4]

References

1. Stern, Wojton and Kwiatek. 1992. J. Food Protect. *55*:514.
2. NACMCF Executive Secretariat. 2007. Analytical utility of *Campylobacter* methodologies. U.S. Department of Agriculture, Food Safety and Inspection Service, Washington, D.C. J. Food Protect. *70*:241.
3. Ransom and Rose. 1998. Isolation, identification, and enumeration of *Campylobacter jejuni/coli* from meat and poultry products. *In* Microbiology laboratory guidebook, 3rd ed., Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, D.C.
4. Hunt, Abeyta and Tran. 2001. Chapter 7 *Campylobacter*. *In* Bacteriological analytical manual, online. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition. Washington, D.C.
5. Stern and Pretanik. 2006. Counts of *Campylobacter* spp. on U.S. broiler carcasses. J. Food Protect. *69*:1034.

Availability

BBL™ Campy-Cefex Agar

Cat. No.	215221	Prepared Plates – Pkg. of 20*
	292487	Prepared Plates – Ctn. of 100*

**Store at 2-8°C.*