

Revisions


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Part Number: 8085597		Category and Description Package Insert, Campy-Cefex Agar	Sheet: 1 of 2 Scale: N/A	A

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.

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.

REAGENTS

Campy-Cefex Agar

Approximate Formula* Per Liter Purified Water

Pancreatic Digest of Casein	10.0 g
Peptic Digest of Animal Tissue	10.0 g
Dextrose.....	1.0 g
Yeast Extract	2.0 g
Sodium Chloride.....	5.0 g
Sodium Bisulfite	0.2 g
Sodium Pyruvate	0.5 g
Ferrous Sulfate, heptahydrate.....	0.5 g
Agar	15.0 g
Cefoperazone	33.0 mg
Cycloheximide	0.2 g
Laked Horse Blood	50 mL

*Adjusted and/or supplemented as required to meet performance criteria.

Warnings and Precautions: For Laboratory Use.

If excessive moisture is observed, invert the bottom over an off-set lid and allow to air dry in order to prevent formation of a seal between the top and bottom of the plate during incubation.

Pathogenic microorganisms may be present in samples. Observe aseptic techniques and established precautions against microbiological hazards throughout all procedures.

After use, prepared plates, sample containers and other contaminated materials must be sterilized by autoclaving before discarding.

Storage Instructions: On receipt, store plates in the dark at 2 – 8°C. Avoid freezing and overheating. Do not open until ready to use. Minimize exposure to light. Prepared plates stored in their original sleeve wrapping at 2 – 8°C until just prior to use may be inoculated up to the expiration date and incubated for recommended incubation times. Allow the medium to warm to room temperature before inoculation.

Product Deterioration: Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

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

Material Provided: BBL Campy-Cefex Agar

Materials Required But Not Provided: Ancillary culture media, reagents, quality control organisms and laboratory equipment as required.

Test Procedure: Observe aseptic techniques. The agar surface should be smooth and moist, but without excessive moisture.

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 h incubation.¹

User Quality Control

Examine plates for signs of deterioration as described under "Product Deterioration." Check performance by inoculating a representative sample of plates with pure cultures of stable control organisms that produce known, desired reactions. The following test strains are recommended:

Test Strains	Expected Results
* <i>Campylobacter jejuni</i> ATCC™ 33291	Growth
<i>Campylobacter jejuni</i> ATCC 33292	Growth
* <i>Escherichia coli</i> ATCC 25922	Inhibition (partial to complete)
<i>Enterococcus faecalis</i> ATCC 29212	Inhibition (partial to complete)
<i>Proteus mirabilis</i> ATCC 12453	Inhibition (partial to complete)
<i>Pseudomonas aeruginosa</i> ATCC 10145	Inhibition (partial to complete)
<i>Aspergillus niger</i> ATCC 16404	Inhibition (trace to complete)

*Recommended organism strain for User Quality Control.

Quality control requirements must be performed in accordance with applicable local, state and/or federal regulations or accreditation requirements and your laboratory's standard Quality Control procedures.

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

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.

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

AVAILABILITY

Cat. No.	Description
215221	BBL™ Campy-Cefex Agar, Pkg. of 20 plates
292487	BBL™ Campy-Cefex Agar, Ctn. of 100 plates
260671	BD GasPak™ EZ Standard Incubation Container
260673	BD GasPak™ EZ Standard Rack
260680	BD GasPak™ EZ Campy Container Systems Sachets (20 sachets per box)
260685	BD GasPak™ EZ Campy Pouch System (containing 20 sachets and 20 resealable pouches)

REFERENCES

- Stern, N.J., B. Wojton, and K. Kwiatek. 1992. A differential-selective medium and dry ice-generated atmosphere for recovery of *Campylobacter jejuni*. *J. Food Protect.* 55:514-517.
- 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.* 70:241-250.
- Ransom, G.M. and B.E. 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.
- Hunt, J.M., C. Abeyta and T. 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.
- Stern, N.J. and S. Pretanik. 2006. Counts of *Campylobacter* spp. on U.S. broiler carcasses. *J. Food Protect.* 69:1034-1039.

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