



## BD™ Campylobacter Agar with 5 Antimicrobics and 10% Sheep Blood (Campy BAP)

### INTENDED USE

**BD Campylobacter Agar with 5 Antimicrobics and 10% Sheep Blood (Campy-BAP)** is a selective medium for the primary isolation of *Campylobacter jejuni* and other cephalothin-resistant *Campylobacter* species from stool specimens.

### PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

Skirrow, in 1977, reported a selective culture medium containing three antimicrobics.<sup>1</sup> In 1978, Blaser et al. reported success in isolating *C. jejuni* with a medium containing four antimicrobics incorporated into Brucella Agar supplemented with 10% defibrinated sheep blood.<sup>2,3</sup>

Subsequently, cephalothin was incorporated to increase its ability to inhibit the normal bacterial flora associated with fecal specimens.<sup>4</sup> Campylobacter Agar with 5 Antimicrobics and 10% Sheep Blood is recommended as a selective medium for the primary isolation and cultivation of *Campylobacter jejuni* from human fecal specimens.<sup>1-4</sup>

For a review of the current taxonomic status of *C. jejuni*, refer to Nachamkin.<sup>5</sup>

This medium supports the growth of *Campylobacter* species due to its content of peptones, dextrose, yeast extract and blood. The peptones supply nitrogenous compounds, carbon, sulfur and trace ingredients. Yeast extract is a source of the B vitamins. Sheep blood supplies additional nutrients. The incorporation of the antimicrobial agents, amphotericin B, cephalothin, polymyxin B, trimethoprim and vancomycin, suppresses the growth of the normal microbial flora in fecal specimens, thereby facilitating isolation of *C. jejuni* and other cephalothin-resistant *Campylobacter* species, e.g. *C. coli* and *C. lari*.

### REAGENTS

#### BD Campylobacter Agar with 5 Antimicrobics and 10% Sheep Blood

Formula\* Per Liter Purified Water

Pancreatic Digest of Casein	10.0 g
Peptic Digest of Animal Tissue	10.0
Glucose	1.0
Yeast Extract	2.0
Sodium Chloride	5.0
Sodium Bisulfite (=Sodium hydrogen sulfite)	0.1
Agar	15.0
Amphotericin B	2.0 mg
Cephalothin	15.0
Trimethoprim	5.0
Vancomycin	10.0
Polymyxin B	2500.0 units
Sheep Blood, defibrinated	10%

pH 7.2 ± 0.2

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

### PRECAUTIONS

**IVD** . For professional use only. ☒

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

Consult **GENERAL INSTRUCTIONS FOR USE** document for aseptic handling procedures, biohazards, and disposal of used product.

## STORAGE AND SHELF LIFE

On receipt, store plates in the dark at 2 to 8° C, in their original sleeve wrapping until just prior to use. Avoid freezing and overheating. The plates may be inoculated up to the expiration date (see package label) and incubated for the recommended incubation times.

Plates from opened stacks of 10 plates can be used for one week when stored in a clean area at 2 to 8° C.

## USER QUALITY CONTROL

Inoculate representative samples with the following strains (for details, see **GENERAL INSTRUCTIONS FOR USE** document). Incubate plates at 37 ± 2°C or 42 ± 2° C for 42 to 48 h in a microaerobic atmosphere. Minimize the exposure to air to avoid a decrease of viability. After incubation, examine plates for growth and selectivity.

Strains	Growth results
<i>Campylobacter jejuni</i> subsp. <i>jejuni</i> ATCC™ 33291	Growth
<i>Escherichia coli</i> ATCC 25922	Inhibition (partial to complete)
<i>Proteus mirabilis</i> ATCC 14153	Inhibition (partial to complete)
<i>Enterococcus faecalis</i> ATCC 29212	Inhibition (partial to complete)
<i>Candida albicans</i> ATCC 10231	Inhibition (partial to complete)
Uninoculated	Red to dark red (blood color)

## PROCEDURE

### Materials Provided

BD *Campylobacter* Agar with 5 Antimicrobics and 10% Sheep Blood (**90 mm Stacker™ plates**). Microbiologically controlled.

### Materials Not Provided

Ancillary culture media, reagents and laboratory equipment as required.

### Specimen Types

Fresh stool specimens or rectal swabs from patients suspected to be infected with *Campylobacter* species, (see also **PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**). Stool specimens and swabs should not be older than 24 to 48 hours. Swabs must be inserted into appropriate transport or holding media (e.g. BD *Campylobacter* Thioglycollate Medium with 5 Antimicrobics). Avoid desiccation and exposure to oxygen.

### Test Procedure

Streak the specimen for dilution as soon as possible after it is received in the laboratory. Alternatively, if material is being cultured directly from a swab, roll the swab over a small area of the surface at the edge; then streak from this inoculated area. It is recommended to also inoculate a less selective medium such as **BD *Campylobacter* Bloodfree Selective Medium** with the specimen.

Incubate inoculated plates at 37 ± 2°C or 42 +/- 2° C in a reduced oxygen, increased carbon dioxide (=microaerobic) atmosphere. The incubation at 42° C may be inhibitory to *Campylobacter jejuni* subsp. *doylei* and other non-thermophilic campylobacters. The appropriate atmosphere can be achieved by using **BD CampyPak™** (together with catalyst) or **CampyPak Plus™** disposable gas generator envelopes in **BD GasPak™** jars, or using a **BD Campy Pouch™** system. Alternatively, the atmosphere can be achieved using evacuation of **BD GasPak** vented jars and replacement with cylinder gases.

### Results

*Campylobacter jejuni* on **BD *Campylobacter* Agar with 5 Antimicrobics and 10% Sheep Blood** will appear as small to medium, mucoid colonies, usually grayish in coloration, flat with irregular edges, and nonhemolytic at 42 to 48 h.<sup>5,6</sup> *C. lari* and *C. coli* will produce similar colonies. An alternate colonial morphology which appears to be strain related consists of round colonies, 1 to 2 mm in diameter, which are convex, entire, and glistening.<sup>5,6</sup> A small percentage

of strains may appear tan or slightly pinkish in coloration. Colonies of *C. jejuni* tend to spread or swarm, especially when initially isolated from fresh specimens.

## PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

This is a standard medium for the isolation of cephalothin-resistant campylobacters from stool specimens, such as *C. jejuni*, *C. coli*, and *C. lari*.<sup>5,6</sup> Since cephalothin-sensitive species such as *C. jejuni* subsp. *doylei*, *C. fetus* subsp. *fetus* and others may occur in fecal specimens, less selective media such as **BD Campylobacter Bloodfree Selective Medium** should also be inoculated with the specimen. Refer to reference<sup>5</sup> for a full discussion of the isolation techniques.

Although certain diagnostic tests may be performed directly on this medium, biochemical and, if indicated, immunological testing using pure cultures are necessary for complete identification. Consult appropriate references.<sup>5,6</sup>

The medium is not suitable for the isolation of *Arcobacter* and *Helicobacter* or intestinal pathogens from other genera such as *Salmonella*.

## REFERENCES

1. Skirrow, M.B. 1977. Campylobacter enteritis: a "new" disease. Br. Med. J. 2:9-11.
2. Blaser, M., J. Cravens, B.W. Powers, and W.L. Wang. 1978. *Campylobacter* enteritis associated with canine infection. Lancet ii:979-980.
3. Blaser, M.J., I.V. Berkowitz, F.M. LaForce, J. Cravens, L.B. Reller, and W-L. L. Wang. 1979. *Campylobacter* enteritis: clinical and epidemiologic features. Ann. Intern. Med. 91:179-185.
4. Wilson, N.A., and W-L. L. Wang. October 13, 1979. Background and culture techniques for *Campylobacter fetus* subsp. *jejuni*. Information flier, Campylobacter Laboratory, Veterans Administration Hospital, Denver.
5. Nachamkin, I. 1995. *Campylobacter* and *Arcobacter*. In P.R. Murray, E.J. Baron, M.A. Pfaller, F.C. Tenover, and R.H. Tenover (ed.), Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
6. Kaplan, R.L. 1980. *Campylobacter*. In E.H. Lennette, A. Balows, W.J. Hausler, Jr. and J.P. Truant (ed.), Manual of clinical microbiology, 3rd. ed. American Society for Microbiology, Washington, D.C.

## PACKAGING/AVAILABILITY

### **BD Campylobacter Agar with 5 Antimicrobics and 10% Sheep Blood (Campy-BAP)**

Cat. No. 254001	Ready-to-use plated media, 20 plates
Cat. No. 254069	Ready-to-use plated media, 120 plates

## FURTHER INFORMATION

For further information please contact your local BD representative.



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