



CAMPY SELECTIVE AGAR (BUTZLER)

- For in vitro use only -

Catalogue No. PC19

Our Campy Selective Agar (Butzler) is a selective medium used in the isolation of *Campylobacter* species.

Campylobacters are gram-negative, non-spore-forming, S-shaped or spiral rods. Among the genus *C. jejuni* subsp. *jejuni* and *C. coli* are recognized as common pathogens of gastrointestinal infections, and *C. jejuni* continues to be the most common enteric pathogen isolated from patients with diarrhea. The development of isolation media containing antimicrobials was a major step forward in recognizing the medical importance of campylobacters and their contribution to human disease.

One of the first published selective formulations was by Butzler, which contained five different antimicrobial agents. Bacitracin, cephalothin, novobiocin, and colistin are antibacterial agents that inhibit most gram-positive and gram-negative organisms that are part of the normal enteric flora. Cycloheximide was also added to inhibit fungal contaminants commonly found in clinical samples.

The medium itself is very nutritious and contains several peptones and extracts, and is also supplemented with laked defibrinated sheep blood, which provides all the essential elements required for sustained bacterial growth. Species within the genera *Campylobacter* have different optimal growth temperatures. Most laboratories use 42°C as the primary incubation temperature for *Campylobacter*; this temperature allows for the growth of *C. jejuni* and *C. coli* and also has a general inhibitory effect on most organisms. The high selectivity of the Butzler formulation allows for a lower incubation temperature of 37°C, and this reduced temperature allows for the isolation of non-thermophilic species such as *Campylobacter fetus* subsp. *fetus*.

Formula per Litre of Medium

Casein-Meat Peptone..... 10.0 g

Casein-Yeast Peptone 10.0 g
Heart Peptone..... 3.0 g
Sodium Chloride 5.0 g
Corn Starch 1.0 g
Agar 13.5 g
Laked Sheep Blood..... 70.0 mL
Bacitracin 25,000 IU
Colistin Sulfate 10,000 IU
Cycloheximide 50.0 mg
Cephazolin 15.0 mg
Novobiocin..... 5.0 mg

pH 7.3 ± 0.2

Recommended Procedure

1. Allow medium to reach room temperature prior to inoculation.
2. Using a direct inoculum from the specimen, perform a four-quadrant streak to obtain well-isolated colonies. If the specimen is contained on a swab, roll the swab several times near the edge of the plate and streak for isolation.
3. Incubate plates under micro-aerophilic conditions at 37 or 42°C.
4. Examine after 24 and 48 hours.

Interpretation of Results

Campylobacter species will produce gray, flat, irregular colonies; spreading colonies is common especially on moist media. Colonies may become round, convex and glistening as the moisture content decreases due to prolonged incubation or age. Some strains of *Campylobacter* may produce tan or pink colored colonies.

Additional biochemical or serological tests should be performed on isolated colonies from pure culture in order to complete identification.

- At 42 °C incubation selectivity is increased and growth is faster except for *C. fetus subsp. fetus*
- If plates are examined after 24 hours, read plates quickly and return the plates to a reduced oxygen atmosphere to ensure viability of oxygen-sensitive strains

Quality Control

After checking for correct pH, color, depth, and sterility, the following organisms are used to determine the growth performance of the completed medium.

Organism	Expected Result
<i>Campylobacter jejuni</i> ATCC 29428	Growth
<i>Staphylococcus aureus</i> ATCC 25923	Inhibition
<i>Escherichia coli</i> ATCC 25922	Inhibition

Storage and Shelf Life

Our Campy Selective (Butzler) Agar should be protected from light and stored at 4°C to 8°C. The medium side should be uppermost to prevent excessive accumulation of moisture on the agar surface. Under these conditions the medium has a 6 week shelf life from the date of manufacture.

References

1. Butzler JP, Dekeyser P, Detrain M, Dehaen F. Related vibrios in stools. J Pediatr 1973; 82:493.
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3. MacFaddin JF. Media for isolation-cultivation-maintenance of medical bacteria, Vol I. Baltimore: Williams & Wilkins, 1985.
4. Isenberg HD, Ed. Clinical microbiology procedures handbook. Washington, DC: ASM, 1992.
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