Campylobacter Agar Base M994

Campylobacter Agar Base is used for the selective isolation of *Campylobacter* species from faecal, food and environmental specimens.

Composition**

Ingredients	Gms / Litre
Proteose peptone	15.000
Liver digest	2.500
Yeast extract	5.000
Sodium chloride	5.000
Agar	12.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 19.75 grams in 500 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 5-7 %v/v sterile lysed horse blood or 10% sterile defibrinated sheep blood and rehydrated contents of 1 vial of Campylobacter Supplement-I (Blaser-Wang) (FD006) or Campylobacter Supplement-III (Skirrow) (FD008). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Campylobacter species are ubiquitous in the environment inhabiting a wide variety of ecological niches (7). Infection with a *Campylobacter* species is one of the most common causes of human bacterial gastroenteritis (7). Most species are found in animals (cattle, swine) and cause infertility and abortion (1). *C. jejuni* was originally isolated on a blood-containing media with antibiotics (2). Skirrow described a selective medium for *Campylobacter* species consisting of Blood Agar Base No. 2 supplemented with horse blood and antibiotics (3). Subsequently, Blaser et al isolated *C. jejuni* on Brucella Agar supplemented with sheep blood and four antibiotics (4). Later on, a fifth antibiotic, cephalothin was added to improve the selectivity of the medium by inhibition of accompanying faecal bacteria (5). Campylobacter Agar Base is recommended by APHA for selective isolation of *Campylobacter* species (6).

Campylobacter Agar Base is well supplemented to support luxuriant growth of *Campylobacter* species. Osmotic equilibrium of the medium is maintained by sodium chloride. Blood serves as an additional source of nutrients including X-factor. The antibiotic supplements namely Blaser-Wang (FD006) and Skirrow (FD008) markedly reduce the growth of normal enteric bacteria while enhancing the growth and recovery of *C. jejuni* from faecal specimens. Amphotericin B in Blaser- Wang supplement greatly or completely inhibits growth of fungi. *C jejuni* colonies appear non-haemolytic, flat and gray with an irregular edge or raised and round with a mucoid appearance. Some strains may appear tan or slightly pink. Swarming may be observed on moist surfaces. Incubation at 35-37°C may show a delayed growth of *C. jejuni* cultures. Incubating the plates at 42°C can fasten this.

The contaminated food sample (10 to 25 grams) is enriched in Campylobacter Enrichment Broth Base (M899 + FD042). The broth is incubated with agitation under a micro aerobic atmosphere for 16-18 hrs. The enrichment culture is then plated onto the selective media i.e. Campylobacter Agar Base (M994) (6).

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium

Basal medium: Yellow coloured clear gel After addition of 5-7% v/v lysed blood: Reddish brown coloured opaque gel forms in Petri plates

Reaction

Reaction of 3.95% w/v aqueous solution at 25°C. pH : 7.4±0.2

Cultural Response

M994: Cultural characteristics observed under reduced oxygen atmosphere after an incubation at 35-37°C for 24-48 hours. (FD006-Campylobacter supplement I, Blaser-Wang/ FD008-Campylobacter supplement III, Skirrow)

Organism	**Growth w/ added FD006**	**Growth w/ added FD008**				
Candida albicans ATCC 10231	none - poor	moderate				
Campylobacter jejuni ATCC 29428	good-luxuriant	good-luxuriant				
Escherichia coli ATCC 25922	none - poor	none - poor				
Enterococcus faecalis ATCC 29212	none - poor	none - poor				

Reference

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2. Dekeyser P., Hossuin-Detrain M, Butzler J. P. Sterron J., 1972, J. In fect. Dis., 125: 390
3. Skirrow M. D., 1977, Br. Med. J. 2:9
4. Blaser M. J., Cravens B. W., Powers and Wang W. L., 1978, Lanect (ii) : 979
5. Wilson and Wang, 1979, Information flier, Campylobacter Laboratory, Veterans Administration Hospital, Denver. Co.
6. Vanderzant C., and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of foods, 3rd Ed., APHA, Washington, D.C.
7. Manning H., Duim B., Wassenaar T., Wagenaar A., Ridley A., Newell D.G., 2001, Appl. Environ. Microbiol., 67:1185

Storage and Shelf Life

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