

## Technical Information

### Campylobacter Agar Base

#### Product Code: DM 1994

**Application:** - Campylobacter Agar Base is recommended 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

#### Principle & 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. Sodium chloride helps to maintain the osmotic equilibrium in the medium. Blood acts as an additional source of nutrients including X-factor. The antibiotic supplements namely Blaser-Wang (MS1006) and Skirrow (MS 2008) markedly reduce the growth of normal enteric bacteria while preventing 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 (DM 1899 + MS 2042). 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 (DM 1994) (6).

#### Methodology

Suspend 19.75 grams of dehydrated powder media in 500 ml distilled water. Mix thoroughly & heat to boil 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 (MS 2006) or Campylobacter Supplement-III (Skirrow) (MS 2008). Shake well before pour into sterile Petri plates.

## Quality Control

### Appearance

Cream to yellow homogeneous free flowing powder

### Gelling

Firm, comparable with 1.2% Agar gel.

### Colour and Clarity

**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

### Ph Range

7.20-7.60

### Cultural Response

DM 1994: Cultural characteristics observed under reduced oxygen atmosphere after an incubation at 35-37°C for 24-48 hours.

(MS 2006- Campylobacter supplement I, Blaser-Wang/ MS 2008-Campylobacter supplement III, Skirrow)

Organism	Growth w/ added MS 2006	Growth w/ added MS 2008
<i>Candida albicans</i> ATCC 10231	none - poor	moderate
<i>Campylobacter jejuni</i> ATCC 29428	good-luxuriant	good-luxuriant
<i>Escherichia coli</i> ATCC 25922	none - poor	none - poor
<i>Enterococcus faecalis</i> ATCC 29212	none - poor	none - poor

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly container and the prepared medium at 2-8°C. Use before expiry date on label.

**Prepared Media:** 2-8° in sealable plastic bags for 2-5 days.

## Further Reading

1. Koneman E. W, Allen S. D., Janda W. M, Schreckenberger P. C., Winn W. C. Jr, 1992, Colour Atlas and Textbook of Clinical Microbiology, 4th Edition, J. B. Lippincott Company.
2. Dekeyser P., Hossuin-Detrain M, Butzler J. P. Sterron J., 1972, J. Infect. 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

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