

## Technical Information

### Blood Free Campylobacter Selectivity Agar Base

**Product Code: DM 1887**

**Application:** - Blood Free Campylobacter Selectivity Agar Base is used for selective isolation and differentiation of *Campylobacter* species.

#### Composition\*\*

Ingredients	Gms / Litre
Beef extract	10.000
Peptic digest of animal tissue	10.000
Casein enzymic hydrolysate	3.000
Sodium chloride	5.000
Sodium deoxycholate	1.000
Ferrous sulphate	0.250
Sodium pyruvate	0.250
Charcoal, bacteriological	4.000
Agar	12.000
Final pH ( at 25°C)	7.4±0.2

\*\*Formula adjusted, standardized to suit performance parameters

#### Principle & Interpretation

As *Campylobacters* are carried in the intestinal tract of animal therefore they contaminate foods of animal origin <sup>(1)</sup>. *Campylobacter* causes intestinal upset or abortion in animals. It is also one of the most important causes of human gastroenteritis, particularly in children. Initially blood was used in the isolation of *Campylobacter*. Later it was reported that charcoal can be effectively used in place of blood <sup>(2)</sup> that rules out the variability noted during isolation of *Campylobacter* using blood. Blood Free Campylobacter Selectivity Agar Base <sup>(3)</sup> formulated as per APHA <sup>(1)</sup> and recommended by the ISO Committee <sup>(4)</sup> is used for selective isolation of *Campylobacter* species. Cephalothin in the original formula was replaced by Cefoperazone as the latter gave better selectivity <sup>(5)</sup>. *Campylobacter* species are highly resistant to cefoperazone, an antibiotic which effectively suppresses growth of *Pseudomonas* and *Enterobacteriaceae* <sup>(7-9)</sup> and increases the selectivity of the medium. Due to this addition, the medium is also known as Campylobacter Charcoal Differential Agar (CCDA). Charcoal, sodium pyruvate and ferrous sulphate reduces the aerotolerance of medium by quenching photochemically generated toxic oxygen derivatives <sup>(9)</sup>. Peptic digest of animal tissue, casein enzymic hydrolysate and beef extract serve as sources of essential nutrients and amino acids. Casein is added to help grow certain strains of nalidixic acid resistant thermophilic environmental *Campylobacter* organisms <sup>(6)</sup>. Additional Amphotericin B in Blood Free Campylobacter Broth Base suppresses the growth of yeast and mold contaminants. Colonies tend to swarm when initially isolated from clinical specimens.

#### Methodology

Suspend 22.75 grams of powder media in 500 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add rehydrated contents of 1 vial of Campylobacter Supplement V (MS2067). Alternatively to increase the selectivity of the medium, rehydrated content of one vial of CAT Selective Supplement (MS2145) may be added to 500 ml sterile molten base. Mix well and pour into sterile Petri plates.

## Quality Control

### Physical Appearance

Grey to black homogeneous free flowing powder

### Gelling

Firm, comparable with 1.2% Agar gel

### Colour and Clarity of prepared medium

coloured, opaque gel forms in Petri plates

### Reaction

Reaction of 4.55% w/v aqueous solution at 25°C. pH : 7.4±0.2

**pH range** 7.20-7.60

### Cultural Response/Characteristics

DM1887: Cultural characteristics observed with added Campylobacter Supplement V (MS2067), after an incubation at 42°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Haemolysis
<i>Campylobacter coli</i> ATCC 33559	50-100	good-luxuriant	≥50%	creamy-grey
<i>Campylobacter jejuni</i> ATCC 29428	50-100	good-luxuriant	≥50%	Grey
<i>Campylobacter laridis</i> ATCC 35222	50-100	good-luxuriant	≥50%	varying type

## Storage and Shelf Life

**Dried media:** Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

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

## Further Reading

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- Jones R. N., et al, 1980, Antimicrob. Agents. Chemother.,17:743
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