Technical Information

Campylobacter Enrichment Broth Base (Preston Enrichment Broth Base)

Product Code: DM 1899

Application: -Campylobacter Enrichment Broth Base is used for selective enrichment and cultivation of *Campylobacter* species.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Beef extract	10.000
Sodium chloride	5.000
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Balton and Robertson (1) modified this as a selective medium for the cultivation of Campylobacter species. It is recommended by APHA (2) for enrichment of thermotolerant Campylobacter species from foods. Preston Enrichment Broth has a rich basal medium to aid resuscitation of sublethally damaged *Campylobacter*. Preliminary incubation of the medium complete with antibiotics for 4 hours at 37°C was recommended to aid resuscitation of injured organisms followed by 42°C for 18- 48 hours (3).

Peptic digest of animal tissue and beef extract in the medium supply nitrogen, vitamins and minerals necessary to support bacterial growth. Sodium chloride provides essential ions.

Preston Selective Supplement (MS1042) contains antibacterial and antifungal agents. Polymyxin B is active only against gram- negative bacteria and Proteus species are sometimes resistant. Trimethoprim usually inhibits *Proteus* species as well as other gram-negative bacteria. Rifampicin is also active against gram-negative organisms. Cycloheximide acts as antifungal agent.

Direct plating without enrichment is adequate for fresh faecal samples, fecal contents or intestinal specimens as high numbers of the organisms may be anticipated. For food sample s enrichment is required. Humphrey (1989) suggested that pre-enrichment at 37°C should be continued for 4 hours and that addition of all antibiotics should be delayed until the 4 hours pre- enrichment had been completed. Enrichment medium with rifampicin was recommended in parallel with similar plating medium.

The*Campylobacter* species grow well in microaerobic conditions i.e. in 5% O_2 at 42°C in about 48 hours. Addition of about 4 drops of glycerol to a filter paper kept within the jar/container will hamper confluent and swarming growth of *Campylobacter* (3).

Methodology

Suspend 12.5 grams of dehydrated media in 470 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to room temperature and aseptically add sterile 25 ml lysed horse blood and reconstituted contents of 1 vial of Campylobacter Supplement IV (Preston Selective Supplement) (MS2042). Shake well before dispense as desired.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity
Basal medium: Light yellow coloured clear solution. After addition of sterile lysed horse blood : Cherry red coloured opaque solution in tubes

Reaction
Reaction of 2.5% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH Range
7.30-7.70

Cultural Response
DM1899: Cultural characteristics observed with added 25ml sterile lysed horse blood and Campylobacter Supplement IV (Preston Selective Supplement), (MS2042), after an incubation at 42°C for 48 hours (5% O_2 + 10% CO_2 + 85% N_2).

Organism	Growth
Bacillus cereus ATCC 10876	inhibited
Campylobacter coli ATCC 33559	good-luxuriant
Campylobacter jejuni ATCC 29428	good-luxuriant
Campylobacter lari ATCC 35221	good-luxuriant
Escherichia coli ATCC 25922	inhibited
Proteus mirabilis ATCC 25933	inhibited
Staphylococcus aureus ATCC 25923	inhibited

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Balton F.J. and Robertson L., 1982, J. Clin. Pathol., 35:462.
2. Vanderzant C. and Splittstoesser D. (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd ed., APHA, Washington, D.C.
3. Humphrey T. J., 1989, J. Appl. Bacteriol. 66, 119-126

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