Technical Information

Preston Agar Base

Product Code: DM 1939

Application: - Preston Agar Base with added supplement is recommended for selective isolation of thermotolerant *Campylobacter* species.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Beef extract	10.000
Sodium chloride	5.000
Agar	12.000
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

This selective medium was described by Bolton and Robertson [1] for isolation of *Campylobacter* species and is recommended by APHA [2]. Isolation of Campylobacter species on selective agar medium is made both with or without selective broth enrichment. Direct plating without enrichment is adequate for fresh faecal samples, faecal contents or intestinal specimens as high numbers of the organisms may be anticipated. For the food samples enrichment is required.

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

Preston Selective Supplement (MS2042) 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.

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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]. On Preston Agar Base thermotolerant *Campylobacter* species tend to produce moist, grey, flat spreading growth, which tends to coalesce. Occasionally some contaminating organisms may grow on this medium but they are usually restricted to the area of primary inoculum. These include *Pseudomonas* species, more resistant coliforms, *Streptococcus* species and yeasts.

Methodology

Suspend 18.5 grams of powder media in 470 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 45-50°C and aseptically add 25 ml sterile, lysed horse blood and reconstituted contents of 1 vial of Campylobacter Selective Supplement IV (Preston Selective Supplement) (MS2042). Mix well and pour into sterile Petri plates.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium

Basal medium:Light yellow coloured clear to slightly opalescent gel. After addition of sterile lysed horse blood : Cherry red coloured opaque gel forms in Petri plates.

Reaction

Reaction of 3.7% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH range

7.30-7.70

Cultural Response/Characteristics

DM 1939: 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 ATCC33559	good-luxuriant
Campylobacter jejuni ATCC29428	good-luxuriant
Campylobacter lari ATCC35221	good-luxuriant
Escherichia coli ATCC25922	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 use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Bolton 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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