



PRODUCT SPECIFICATION SHEET

Preston Agar Base (DM572)

Intended Use

Preston Agar Base (DM572) is recommended for selective isolation of thermotolerant *Campylobacter* species.

Product Summary and Explanation

Campylobacter spp. can cause mild to severe diarrhea, with loose, watery stools often followed by bloody diarrhea. These pathogens are highly infective, and transmitted by contaminated food or water. This selective medium was described by Bolton and Robertson⁽¹⁾ for isolation of *Campylobacter* species and is recommended by APHA.⁽²⁾ This formula, with the addition of the Preston Supplement, was developed to isolate *Campylobacter* spp. from human, animal, and environmental specimens. The Preston formulation demonstrated improved recovery and selectivity of *Campylobacter* spp. in comparative studies with other selective media (SKirrow, Butzler, Blaser and Campy-Blood Agar).⁽³⁾ Isolation of *Campylobacter* species on selective agar medium is made both, with or without selective broth enrichment.

Principles of the Procedure

Preston Agar Base contains peptic digest of animal tissue and beef extract which provides carbon, nitrogen, vitamins and minerals necessary to support bacterial metabolism. Sodium chloride provides essential ions and helps to maintain the osmotic balance in the medium. Preston Selective Supplement (MS135) 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.

Formula / Liter

Ingredients	Gms / Liter
Peptic digest of animal tissue	10.00
Beef extract	10.00
Sodium chloride	5.00
Agar	12.00
Final pH: 7.5 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 18.5 grams of the medium in 470 ml of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. 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) (MS135).
5. Mix well and pour into sterile Petri plates.





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Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
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 of 3.7% solution	pH 7.5 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.2% Agar gel

Expected Cultural Response: Cultural characteristics observed with added 25ml sterile lysed horse blood and Campylobacter Supplement IV (Preston Selective Supplement), (MS135), after an incubation at 42°C for 48 hours (5% O₂ + 10% CO₂ + 85% N₂).

Sr. No.	Organisms	Results to be achieved
		Growth
1.	<i>Bacillus cereus</i> ATCC 10876	inhibited
2.	<i>Campylobacter coli</i> ATCC 33559	good-luxuriant
3.	<i>Campylobacter jejuni</i> ATCC 29428	good-luxuriant
4.	<i>Campylobacter lari</i> ATCC 35221	good-luxuriant
5.	<i>Escherichia coli</i> ATCC 25922	inhibited
6.	<i>Proteus mirabilis</i> ATCC 25933	inhibited
7.	<i>Staphylococcus aureus</i> ATCC 25923	inhibited

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. 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 samples enrichment is required.
2. The *Campylobacter* species grow well in microaerobic conditions i.e. in 5% O₂ 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*.⁽⁴⁾
3. Refer to appropriate references for standard test procedures.

Results

1. *Campylobacter* colonies are round to irregular with smooth edges. They may have translucent, white colonies to spreading, flat, transparent growth. Some strains appear tan or slightly pink. Normal enteric flora is completely to markedly inhibited.
2. Typically, *Campylobacter* spp. are oxidase positive and catalase positive. Refer to appropriate references and standard test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.





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Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. On Preston Agar Base thermotolerant *Campylobacter* species tend to produce moist, grey, flat spreading growth, which tends to coalesce.
2. 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.
3. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Preston Agar Base

Product Code : DM572

Available Pack sizes : 500gm

References

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. Bolton, F. J., D. Coates, P. M. Hinchliffe, and L. Robertson. 1983. J. Clin. Pathol. 36:78-83.
4. Humphrey T. J., 1989, J. Appl. Bacteriol. 66, 119-126.

Further Information

For further information please contact your local MICROMASTER Representative.



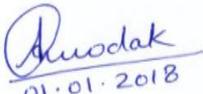
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