

Technical Information

Campylobacter Agar Plate

Product Code: PM 1994

Application: Campylobacter Agar Plate recommended for selective isolation of *Campylobacter* species from faecal specimens, food and environmental specimens.

Composition**

Ingredients	Gms / Litre
Proteose peptone	15.000
HML extract #	2.500
Yeast extract	5.000
Sodium chloride	5.000
Agar	12.000
MS2006/MS2008	-----
Blood	100ml
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Liver digest

Principle & Interpretation

Campylobacter species are ubiquitous in the environment inhabiting a wide variety of ecological niches (8). Infection with a *Campylobacter* species is one of the most common causes of human bacterial gastroenteritis (8). Most species are found in animals (cattle, swine) and cause infertility and abortion (7). *C. jejuni* was originally isolated on a blood-containing media with antibiotics (3). Skirrow described a selective medium for *Campylobacter* species consisting of Blood Agar Base No. 2 supplemented with horse blood and antibiotics (9). Subsequently, Blaser et al isolated *C. jejuni* on Brucella Agar supplemented with sheep blood and four antibiotics (2). Later on, a fifth antibiotic, cephalothin was added to improve the selectivity of the medium by inhibition of accompanying faecal bacteria (12). Campylobacter Agar Base is used by APHA for selective isolation of *Campylobacter* species (10). Campylobacter Agar Base is well supplemented to support luxuriant growth of *Campylobacter* species. Osmotic equilibrium of the medium is maintained by sodium chloride. Blood serves as an additional source of nutrients including X-factor. The antibiotic supplements namely Blaser-Wang (MS2006) and Skirrow (MS2008) markedly reduce the growth of normal enteric bacteria while enhancing 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 (DM1899 + MS2042). 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 (DM1994) (10).

Type of specimen

Clinical samples - Faeces; Food and dairy samples; Environmental samples.

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,4,11).

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic Use. Read the label before opening the pack. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.



Dehydrated Culture Media
Bases / Media Supplements

Limitations :

1. Due to nutritional variations, some strains may show poor growth.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature

Methodology

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

Quality Control

Physical Test

Appearance

Sterile Campylobacter Agar in 90 mm disposable plates.

pH

7.20-7.60

Quantity of medium

25 ml of medium in 90 mm disposable plates.

Colour of medium

Red coloured medium

Sterility Test

Passes release criteria

Cultural Response

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

Organism	Growth
<i>Candida albicans</i> ATCC 10231 (00054*)	none - poor
<i>Campylobacter jejuni</i> ATCC 29428 (00156*)	good-luxuriant
<i>Escherichia coli</i> ATCC 25922 (00013*)	none - poor
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	none - poor

Storage and Shelf Life

- On receipt store between 20-30°C.
- Use before expiry date on the label.
- Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product.

Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).



Further Reading

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Blaser M. J., Cravens B. W., Powers and Wang W. L., 1978, Lanect (ii) : 979
3. Dekeyser P., Hossuin-Detrain M, Butzler J. P. Sterron J., 1972, J. Infect. Dis., 125: 390
4. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
7. 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.
8. Manning H., Duim B., Wassenaar T., Wagenaar A., Ridley A., Newell D.G., 2001, Appl. Environ. Microbiol., 67:1185
9. Skirrow M. D., 1977, Br. Med. J. 2:9
10. Vanderzant C., and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of foods, 3rd Ed., APHA, Washington, D.C.
11. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
12. Wilson and Wang, 1979, Information flier, Campylobacter Laboratory, Veterans Administration Hospital, Denver. Co.

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- User must ensure suitability of the product(s) in their application prior to use.
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