Cary - Blair Medium Base (Transport Medium w/o Charcoal) (DM056)

Intended Use
Cary - Blair Medium Base (Transport Medium w/o Charcoal) (DM056) is recommended for collection and transport of clinical specimen.

Product Summary and Explanation
Transport Medium is a non-nutritive, chemically defined, semisolid, phosphate buffered medium that provides a reduced environment. The sole purpose of this medium is to maintain the viability of organisms during the time from collection to examination of the specimen without significant increase in growth. Transport Medium should be essentially non-nutritive so that the test organisms do not increase in numbers during transport. Transport media were originally formulated by Stuart et al[1] for carrying gonococcal specimens to the laboratory. In 1964, Cary and Blair modified a Stuart's transport medium, by substituting inorganic phosphates for glycerophosphate, containing fewer nutrients, low oxidation-reduction potential and raising the pH to 8.4.[2] Cary-Blair Medium w/o Charcoal is used for collection and transport of clinical specimens. It is also recommended by APHA[3] and various authors for transport of specimens.[4,5,6] Since this transport media has a high pH, viability of *Vibrio* cultures can be maintained for a longer duration.[7] This medium also facilitates the recovery of *Salmonella* and *Shigella* species in fecal samples.[4]

Principles of the Procedure
Cary-Blair Medium Base is prepared with minimal nutrients to facilitate survival of organisms without multiplication. It contains sodium thioglycollate which provides a low oxidation-reduction potential. Disodium phosphate buffers the medium whereas sodium chloride maintains the osmotic equilibrium. Alkaline pH of the medium minimizes bacterial destruction due to the formation of acid.

Formula / Liter

Ingredients	Gms / Liter
Disodium phosphate	1.10
Sodium thioglycollate	1.50
Sodium chloride	5.00
Agar	5.00
Final pH: 8.4 ± 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 12.6 grams in 991 ml distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Cool to 50°C and aseptically add 9 ml of 1% aqueous calcium chloride solution.
4. Adjust pH to 8.4 if necessary.
5. Distribute in 7 ml amounts in screw-capped tubes.
6. Steam for 15 minutes. Cool and tighten the caps.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Whitish coloured, slightly opalescent solution in tubes
Reaction of 1.67% Solution	pH : 8.4 ± 0.2 at 25°C
Gel Strength	Semisolid, comparable with 0.5% Agar gel

Expected Cultural Response : Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours, when subcultured on Tryptone Soya Agar (DM247).

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	*Enterobacter aerogenes ATCC 13048*	50-100	good- luxuriant
2.	*Escherichia coli ATCC 25922*	50-100	good- luxuriant
3.	*Klebsiella pneumonia ATCC 13883*	50-100	good- luxuriant
4.	*Neisseria meningitidis ATCC 13090*	50-100	good- luxuriant
5.	*Salmonella Typhimurium ATCC 14028*	50-100	good- luxuriant
6.	*Shigella flexneri ATCC 12022*	50-100	good- luxuriant
7.	*Vibrio cholerae ATCC 15748*	50-100	good- luxuriant
8.	*Vibrio parahaemolyticus ATCC 17802*	50-100	good- luxuriant

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

Test Procedure

1. For collection of the specimen, use sterile cotton tipped swabs on wooden sticks.
2. Push the swabs down to one third of the medium depth and cut the stick so that when the cap is screwed down, the swab is forced to the bottom of the medium. Tighten the cap firmly on the bottle.
3. The specimen will be preserved and the viability of the organisms will be also maintained during transport, but over the time it will diminish. Therefore direct inoculation of the specimen is advised.
4. Some growth of accompanying contaminants may also occur during longer period of transit.
5. The specimen should be inoculated into a proper medium as soon as possible.

Results

1. Survival of bacteria in a transport medium depends on many factors including the type and concentration of bacteria in the specimen, the formulation of the transport medium, the temperature and duration of transport and inoculation to appropriate culture media within 24 hours. Optimal growth and typical morphology can only be expected following direct inoculation and appropriate cultivation.
2. 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.

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. Specimens taken from transport media will not exhibit the optimal or comparative growth as expected from direct inoculation and cultivation.
2. Viability of cells will diminish over time and some degree of multiplication or growth of contaminants can occur during prolonged periods of transit. This is particularly true of fecal specimens that contain substantial numbers of coliforms.
3. The condition of the specimen received by the laboratory for culture is a significant variable in recovery and final identification of the pathogen. An unsatisfactory specimen (overgrown by contaminants, containing non-viable organisms, or having the number of pathogens greatly diminished) can lead to erroneous or inconclusive results.
4. Consult appropriate texts for detailed information and recommended procedures.

Packaging
Product Name : Cary - Blair Medium Base (Transport Medium w/o Charcoal)
Product Code : DM056
Available Pack sizes : 100gm / 500gm

References

1. Stuart, Toshach and Pastula, 1954, Can. J. Public Health, 45:73.
2. Cary and Blair, 1964, J. Bacteriol., 88:96.
3. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA,Washington, D.C.
4. Cary, Mathew, Fusillo and Harkins, 1965, Am. J. Clin. Pathol., 43:294.
5. Gaines et al, 1965, Am. J. Trop. Med. Hyg., 14:136.
6. Morris and Heck, 1978, J. Clin. Microbiol., 8:616.
7. Murray P. R., Baron E. J., Tenover F. C., Pfaller M. A., Yolken R.H., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.

Further Information

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