Modified Cary - Blair Medium

M1660

Intended Use:

Recommended for collection and shipment of clinical specimens.

Composition**

Ingredients	g / L
Disodium hydrogen phosphate	1.100
Sodium thioglycollate	1.500
Sodium chloride	5.000
Phenol red	0.018
Agar	5.000
Final pH (at 25°C)	8.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 12.6 grams in 991 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Cool to 45-50°C and aseptically add 9 ml of 1% aqueous calcium chloride solution. Adjust pH to 8.4 if necessary. Distribute in 7 ml amounts in screw capped tubes. Steam for 15 minutes. Cool and tighten the caps.

Principle And Interpretation

Cary - Blair Medium is used for the collection and transport of clinical specimens. Originally the transport medium was devised by Stuart et al (1) for carrying the gonococcal specimens to the laboratory. Later on, for transporting faecal specimens, Cary and Blair devised a new medium which consisted less nutrients, low oxidation and reduction potential and a high pH (2). Various authors have then used this medium and reported it to be quite satisfactory for transporting the clinical specimens (3,4,5). Modified Cary Blair Medium is the modification of Cary-Blair Medium with addition of phenol red indicator in it.

This medium is prepared with minimal nutrients to increase the survival of the organisms without multiplying. Sodium thioglycollate is incorporated in the medium to provide a low oxidation-reduction potential. The pH of the medium is relatively alkaline which minimizes the bacterial destruction due to the formation of acid. Phenol red is added as indicator which is red at alkaline pH, while yellow at acidic pH. Medium can maintain viability of fastidious microorganisms for only a short period of time. It is recommended that best results are obtained by direct inoculation of isolate on enriched medium at the same time specimen is inoculated into transport medium.

Type of specimen

Clinical samples : pathological samples.

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (6,7).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic Use only. For professional use only. Read the label before opening the container. 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.

Limitations :

1. The specimen will be preserved and the viability of the organisms will be also maintained during transport, but over the time it will diminish.
2. Therefore direct inoculation of the specimen is advised.

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.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Semisolid, comparable with 0.5% Agar gel.

Colour and Clarity of prepared medium

Red coloured clear to slightly opalescent solution in tube

Reaction

Reaction of 1.26% w/v aqueous solution at 25°C. pH : 8.4±0.2

pH

8.20-8.60

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours when sub cultured on Tryptone Soya Agar (M290).

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant
#*Klebsiella aerogenes* ATCC 13048 (00175*)	50-100	luxuriant
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	luxuriant
Klebsiella pneumoniae ATCC 13883 (00097*)	50-100	luxuriant
Shigella flexneri ATCC 12022 (00126*)	50-100	luxuriant
Vibrio cholerae ATCC 15748	50-100	luxuriant
Vibrio parahaemolyticus ATCC 11344	50-100	luxuriant
Neisseria meningitidis ATCC 13090	50-100	luxuriant

Key : (*) Corresponding WDCM numbers. (#) Formerly known as *Enterobacter aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 5-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. 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 (6,7).

Reference

1. Stuart, Toshach and Pastula, 1954, Can. J. Public Hlth., 45:73.
2. Cary and Blair, 1964, J. Bact., 88:96.
3. Cary, Fusillo and Harkins, 1965, Am. J. Clin. Pathol., 43:294.
4. Gaines, et al, 1965, Am. J. Trop. Med. Hyg., 14:136.
5. Morris and Heck, 1978, J. Clin. Microbiol., 8:616.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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.

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Plot No.C-40, Road No.21Y,
MIDC, Wagle Industrial Area,
Thane (W) -400604, MS, India

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