Ready Prepared Media

Technical Information

Burkholderia cepacia Agar Plate

Product Code: PM 2640

Application: Recommended for selective isolation of *Burkholderia cepacia* from clinical sample.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
Yeast extract	4.000
Sodium pyruvate	7.000
Potassium dihydrogen phosphte	4.400
Disodium hydrogen phosphate	1.400
Bile salts	1.500
Ammonium sulphate	1.000
Magnesium sulphate	0.200
Ammonium ferrous sulphate	0.010
Phenol red	0.020
Crystal violet	0.001
Agar	12.000
PGT Selective Supplement	MS2232 (2 vials)
Polymyxin B	150000IU
Gentamicin	5.0 mg
Ticarcillin	100.0 mg
Final pH (at 25°C)	6.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Burkholderia cepacia is an important opportunistic pathogen and causes pulmonary infection among individuals with cystic fibrosis (CF). The organism may lead to *Burkholderia cepacia* syndrome, a neutralizing pneumonia associated with fever that culminates in to a rapid and fatal clinical deterioration (1). *B cepacia* is difficult to isolate on routinely used laboratory media like MacConkey Agar, since *B.cepacia* is a slow grower and therefore it is usually outgrown by the faster growing Escherichia coli, Staphylococcus aureus and Pseudomonas aeruginosa. Burkholderia Cepacia Agar is based on PC medium, which was originally devised by Gilligan (2). This medium was found to be superior to MacConkey Agar for growth of *B.cepacia.* The medium is made selective for *B.cepacia* by the incorporation of bile salts, crystal violet and antibiotics. The antibiotics included are Polymyxin B, Gentamicin, Ticarcillin in the form of freeze dried supplement (FD). Peptone and yeast extract in the medium provides the nitrogenous, vitamin B source and other essential nutrients. Crystal violet, bile salts and antimicrobial agents are used as selective agents. Crystal violet and bile salts inhibits gram-positive cocci including Enterococci and Staphylococci. The antibiotics (FD) namely ticarcillin, polymyxin B and gentamicin inhibit gram-negative bacteria. *B. cepacia* metabolizes pyruvate forming alkaline end products. These end products elevate the pH of the medium. The phenol red indicator changes colour from pink orange to pink red in alkaline pH. Inoculate the plate with the specimen so as to obtain isolated colonies. The plates should be incubated for a period of 4 days to allow *B. cepacia* to grow and form colonies and subsequent colour change (2,3). The medium is not selective only for *B. cepacia.* Other organisms forming similar colonies may also grow on this medium. Therefore results obtained on this media should not be the sole criteria for identification of *B. cepacia* (4).

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Type of specimen

Clinical samples - Throat swab, Sterile body fluids

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling for handling specimens specimens as as per established guidelines (4,5). After use, contaminated materials must must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic Use. For professional use only. 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.

Limitations

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3. Further biochemical tests must be carried out for confirmation.

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

Appearance
Sterile Burkholderia cepacia Agar in 90mm disposable plate.
Colour
Orange coloured medium
Quantity of medium
25ml of medium in 90mm plate
Reaction
6.00 - 6.40
Sterility Check
Passes release criteria
Cultural response
Cultural characteristics observed after an incubation at 35-37°C for 48-72 hours.

Organism	Inoculum(CFU)	Growth	Recovery	Colour of Colony
Burkholderia cepacia ATCC 25608	50-100	good-luxuriant	>=50%	Sage green colonies with bright pink medium
Pseudomonas aeruginosa ATCC 9027 (00026*)	>=10^3	inhibited	0%	

(*) - Corresponding WDCM numbers

Storage and Shelf Life

- On receipt store between 2-8°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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Further Reading

1. Whitby P. W., 1998, J. Clin. Microbiol., 36:1642 1645
2. Gilligan, 1996. Clin. Microbiol. Newsl. 18:8
3. MacDonald Gilligan, Welch, Reller and Menegus, 1994, Vol. 5:1, Cystic Fibrosis Foundation, Washington,DC.
4. Christensen et al, 1980, J. Clin. Microbiol., 27:27
5. Gilligar, Gage, Bradshaw, schidlow and Deciscco, 1985, J. Clin. Microbiol., 22
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.

Disclaimer :

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