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Burkholderia cepacia Selective Agar Base

Recommended for selective medium used for isolation of *Burkholderia cepacia* from pharmaceutical products, the respiratory secretions of patients with cystic fibrosis and other non-clinical specimens.

REF: BS.1/BC01.100.0100	100 Gram	REF: BS.1/BC01.250.0250	250 Gram
REF: BS.1/BC01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Burkholderia cepacia is an important opportunistic pathogen and causes pulmonary infection among individuals with cystic fibrosis (CF). *Burkholderia cepacia* species are gram negative, rod shaped bacteria. The organism may lead to *Burkholderia cepacia* syndrome, a neutralizing pneumonia associated with fever that culminates in to a rapid and fatal clinical deterioration (5). *Burkholderia cepacia* species may cause severe infection in individuals with cystic fibrosis and immunosuppressed individuals. *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 (1). This medium was found to be superior to MacConkey Agar for growth of *B. cepacia*.
Burkholderia cepacia have the potential of overcoming antimicrobial preservative systems and antiseptics, and can grow in preserved aqueous oral liquids and topical products. This medium is recommended for detection of *Burkholderia cepacia* in pharmaceutical products (4).

METHOD PRINCIPLE

Casitose and yeast extract in the medium provides the carbonaceous, nitrogenous, long chain amino acids, vitamin B source and other essential nutrients. Crystal violet and antimicrobial agents are used as selective agents. Crystal violet and vancomycin inhibits gram-positive cocci including *Enterococci* and Staphylococci. The antibiotics namely polymyxin B and gentamicin inhibits gram-negative bacteria. *B. cepacia* metabolizes pyruvate forming alkaline end products. Sucrose and Lactose are the fermentable carbohydrate. The phenol red indicator changes colour from pink orange to pink red in alkaline pH.

MEDIA COMPOSITION

Item	Formula per liter of medium
- casein peptone	10.00 gm
- Lactose	10.00 gm
- Sucrose	10.00 gm
- Sodium chloride	5.00 gm
- Yeast extract	1.500 gm
- Phenol red	0.080 gm
- Crystal violet	0.002 gm
- Agar	14.00 gm

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.
Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the Burkholderia cepacia Selective Agar Base material safety data sheet.

STORAGE AND STABILITY

BioScien Burkholderia cepacia Selective Agar Base are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a 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.

Final pH 6.8 ± 0.2 at 25°C

MEDIA PREPARATION

Suspend 50.58 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add the rehydrated contents of one vial of BCSA Selective supplement. Mix well and pour in sterile Petri plates.

Deterioration

The color of ***BioScien*** Burkholderia cepacia Selective Agar Base is Light yellow to pink homogeneous free flowing powder. If there are any physical changes, discard the medium.
The hydrated medium is Orange coloured clear to slightly opalescent gel forms in Petri plates, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION [1-3]

The sample is initially enriched in Soyabean Casein Digest Medium and then plated on Burkholderia cepacia Selective Agar.

Clinical samples: Respiratory secretions, Pharmaceutical samples.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile petri-dishes
- Incubator

PERFORMANCE CHARACTERISTICS

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

Organism	Growth	Colour of colony
Burkholderia cepacia ATCC 25416	good - luxuriant	greenish brown colonies w/yellow halo or white colonies surrounded by pink red zone
Burkholderia cenocepacia ATCC BAA-245	good - luxuriant	greenish brown colonies w/yellow halo or white colonies surrounded by pink red zone
Burkholderia multivorans ATCC BAA-247	good - luxuriant	greenish brown colonies w/yellow halo or white colonies surrounded by pink red zone
Pseudomonas aeruginosa ATCC 9027	Inhibition	
Staphylococcus aureus subsp.aureus ATCC 6538	Inhibition	

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

1. Gilligar, Gage, Bradshaw, schidlow and Deciscco, 1985, J. Clin. Microbiol., 22:5.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
3. 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.
4. The United States Pharmacopoeia, 2019, Microbial exmination of nonsterile products- Tests for Burkholderia cepacia complex The United States Pharmacopoeial Convention. Rockville, MD.
5. Whitby P. W., 1998, J. Clin. Microbiol., 36:1642 1645.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number	⚠	Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		