ALLIANCE BIO EXPERTISE

Reference: BPWR3021 **A.B.E. - Technical Data Sheet**

Product: # *Burkholderia cepacia* Selective Agar (BCSA)

Specification

Solid medium for the selective isolation of *Burkholderia cepacia* complex from the respiratory secretions of cystic fibrosis patients and for control in water, cosmetics and other samples.

Presentation

	Packaging Details	Shelf Life	Storage
20 Prepared Plates 90 mm with: 21 ± 2 ml	1 box with 2 packs of 10 plates/pack. Single cellophane.	3 months	2-14 ºC

Composition

Composition (g/l):

Tryptone	10.0000
Sodium Chloride	5.0000
Sucrose	10.0000
Lactose	10.0000
Yeast Extract	1.5000
Phenol red	0.0800
Crystal violet	0.0020
Gentamicin	0.0100
Polymixin B sulphate	600,000 IU
Vancomycin HCL	0.0025
Agar	15.0000

Description /Technique

Description

Chronic bacterial colonization of the upper respiratory tract causing exacerbations of lung infections is the leading cause of morbidity and mortality in patients with cystic fibrosis (CF). Pathogenic bacteria normally associated with this disease are *Staphylococcus aureus, Pseudomonas aeruginosa and Haemophilus influenzae,* but increasingly more often other glucose non-fermenters such as *Stenotrophomonas maltophilia, Alcaligenes xylosoxidans,* and members of the "*Burkholderia cepacia* complex" are cited. The first detailed description of the clinical importance of this bacterial complex was made by Isles et al., in 1984, documenting its prevalence and defining the " *B. cepacia* syndrome, "a severe and progressive respiratory failure with bacteremia that occurred in about 20% of infected patients with cystic fibrosis".
Members of the "*Burkholderia cepacia* complex" demonstrate slow and poor growth in conventional media, and thus often go unnoticed or masked by colonies of other fast-growing mucoid bacteria, such as *Pseudomonas, Staphylococcus or Klebsiella*, ubiquitous in the respiratory tract secretions of patients with cystic fibrosis.

On the other hand, *Burkholderia cepacia* is a saprophyte in waters, humid environments and soils. It has been frequently reported in water, cosmetics, medications and non-sterile products used in hospitals, so it is important to control its absence in these samples, especially those products for inhalation use or aqueous preparations for oral, oromucosal, cutaneous, or nasal use.

BCSA medium was prepared according to the formulation of Henry et al (1997) that includes lactose and sucrose as an energy source and a nutrient base of peptone and yeast extract. The selectivity is achieved with the addition of gentamicin, polymyxin and vancomycin. This combination of antibiotics has proven to be more effective than polymyxin and bacitracin used by Welch et al. (1987), or polymyxin, gentamicin and ticarcillin proposed by Gilligan and collaborators (1985), as it obtains earlier growth (punctiform colonies at 24 hours), along with good recovery of "B. cepacia complex" and excellent inhibition of growth of non-fermenters not belonging to the " *B. cepacia* complex".

Recommended use technique:

For plate inoculation follow the laboratories standard methods or the applicable norms (spiral plating method, streak plating, dilution banks, spread plating with drigralsky rod etc ...)
The sample of respiratory tract secretion is collected and processed according to established clinical protocols.

It is inoculated on the surface of the culture medium to obtain discrete colonies and incubated at 35 ± 2 ° C for 5 days with daily readings.
Normally members of the " *B. cepacia* complex "produce punctiform colonies at 24 hours and after 72 hours incubation 95% of the colonies which have developed belong to the "*B. cepacia* complex". However, as occasionally a few colonies of *Flavobacterium spp.*, *Ralstonia spp.*, or *Burkholderia gladioli*, which do not belong to the "*B. cepacia* complex", may develop we recommend that biochemical, genetic or molecular confirmative identification of the isolates be carried out.

Precautions

For in vitro diagnostic use. Do not reuse. For professional use only.
Do not use the product if it shows evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

Quality control

Physical/Chemical control

Color : Reddish pH: 6.8 ± 0.3 at 25ºC

Microbiological control

Inoculate: 50-100 CFU (productivity)/ 10^4-10^6 CFU (selectivity).

According to ISO 11133 & USP Pharmacopeia

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 30-35 ºC. Reading at 24-48 until 72 h

Microorganism	Growth
Burkholderia cepacia ATCC® 25416	Good (≥50%) - Greenish–brown colonies with yellow halo
Burkholderia cepacia ATCC® 25608	Good (≥50%) - Greenish–brown colonies with yellow halo
Staphylococcus aureus ATCC® 6538, WDCM 00032	Inhibited
Ps. aeruginosa ATCC® 9027, WDCM 00026	Inhibited
Burkholderia cenocepacia ATCC® BAA-245	Good (≥50%). White colonies
Burkholderia multivorans ATCC® BAA-247	Good (≥50%). White colonies surrounded by red zone

Sterility control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

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· ISO Standard 11133:2014 Microbiology of food, animal feed and water. Preparation, production, storage, and performance testing of culture media.

· USP 42 - NF 37 1S (2019) Chapter <60> Microbiological examination of nonsterile products: Test for *Burkholderia cepacia complex*. USP Corp. Inc. Rockville. MD. USA.