Product : BURKHOLDERIA CEPACIA SELECTIVE AGAR BASE (BCSA BASE)

Also known as
BCSA

Specification
Solid medium for the selective isolation of *Burkholderia cepacia* complex from the respiratory secretions of cystic fibrosis patients from clinic samples and cosmetic, water samples.

Formula * in g/L
Tryptone	10.000
Sodium Chloride	5.000
Sucrose	10.000
Lactose	10.000
Yeast Extract	1.500
Phenol red	0.080
Crystal violet	0.002
Agar	15.000

Final pH 6,8 ± 0,3 at 25 ºC

* Adjusted and /or supplemented as required to meet performance criteria

Directions
Dissolve 51,6 g of the powder in 1 litre of distilled water, heating if necessary. Distribute 500 mL volumes into suitable containers and sterilize by autoclaving at 121 ° C for 15 minutes. Cool to about 50 ° C and aseptically add the contents of a vial of Burkholderia cepacia Selective Supplement (BCSA) to each 500 mL of medium, (Art. No. DSHB3156). Mix and pour into Petri dishes.

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".

Technique
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.

Quality control

Incubation temperature: 30-35 ºC **Incubation time:** 48-72h

Inoculum: Practical range 50-100 CFU (Productivity) according to USP & ISO 11133:2014/Amd 1:2018. Spiral Plate Method

Microorganism	Growth	Remarks
Burkholderia cepacia ATCC® 25608	Productivity > 0.50	Greenish-brown colonies w. yellow halo
Burkholderia cepacia ATCC® 25416	Productivity > 0.50	Greenish-brown colonies w. yellow halo
Burkholderia cenocepacia ATCC® BAA-245	Productivity > 0.50	White colonies
Burkholderia multivorans ATCC® BAA-247	Productivity > 0.50	White colonies, surrounded by red zone
Staphylococcus aureus ATCC® 6538	Inhibited	w. selective supplement
Pseudomonas aeruginosa ATCC® 9027	Inhibited	w. selective supplement

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

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).