MAST® Culture Media and Supplements

Technical Information Sheet

Product Code DM 253

Burkholderia Cepacia Medium

A basal medium for the selective isolation of *Burkholderia (Pseudomonas) cepacia*.

1. Description

Recent studies have shown that *B.cepacia* is emerging as an increasingly important pulmonary pathogen.[1-3] *B.cepacia* grows slowly on commonly used laboratory media such as Blood Agar and MacConkey Agar and is often overgrown by organisms such as *Pseudomonas .aeruginosa*, *Staphylococcus aureus* and *Escherichia coli*, all commonly found in the respiratory tract of patients with cystic fibrosis. Relatively pure material uncontaminated by oral secretions is often difficult to obtain, resulting in the need for a selective medium specific for *B.cepacia*.

Selective media for the isolation of *B.cepacia* have recently been investigated by a number of people. Wu and Thompson[4] used 9-chloro-9-(4-diethylaminophenyl)-10 phenylacridan (C-390) and polymyxin B sulphate as selective agents, whereas Gilligan et al[5] used polymyxin B as a selective agent but replaced C-390 with ticarcillin.

MAST Burkholderia cepacia Medium is based on the formulation by Gilligan *et al*[5] to enhance the recovery of *B.cepacia* from respiratory secretions. The medium contains a combination of bile salts and crystal violet as selective agents. However, it is designed for use with Burkholderia cepacia Selecta-tab™ and Selectavial™ (MS22, SV22) to give the required concentrations of ticarcillin and polymyxin B for the selective isolation of *B.cepacia*.

*Formulation may be modified to meet performance criteria

2. Technical Formula*

Formula	grams per litre
Magnesium sulphate	0.2
Ferrous ammonium sulphate	0.01
Potassium di-hydrogen phosphate	4.35
Di sodium hydrogen phosphate	1.42
Bile salts	0.5
Agar	12.0
Ammonium sulphate	1.0
Peptone mixture	8.0
Crystal violet	0.001
Phenol red	0.02
Sodium pyruvate	5.0
pH approx. 6.2	

4. In Use

Burkholderia cepacia Medium supplemented with the appropriate antibiotics can be used to culture from respiratory secretions such as sputa, pharyngeal swabs or bronchial washings.

For quantitative investigations inoculate additional plates with the prepared dilutions. Plates should be incubated and examined after 24 and 48 hours at 37C and then for a further 5 days at room temperature before being discarded[6].

Colonies of *B. cepacia* will grow up to 1-2mm in diameter, the medium often turning pink to purple especially in areas of heavy growth. Occasionally growth by some strains of *Candida* spp., *Stenotrophomonas maltophilia*, *Comomonas acidovorans*, multi-resistant *Pseudomonas aeruginosa* and *Pseudomonas putida* may occur on the medium but generally organisms other than *B. cepacia* will be strongly inhibited.

3. Directions

1. Suspend by swirling 32.5g of powder in 1 litre or the contents of the sachet in the stated volume of distilled or deionised water.

2. Ensure the medium is evenly suspended, boil to dissolve the agar and autoclave at 121°C (15 p.s.i.) for 15 minutes.

3. Cool to 50-55°C and hold in a water bath at this temperature.

4. The medium can be made selective by adding one B.cepacia Selectatab (MS22) per 100ml of medium, or one B.cepacia Selectavial (SV22) per 500ml.

5. Mix well and pour plates and allow to set.

6. Poured plates may be used immediately or stored at 4°C for up to 2 weeks in plastic bags.

5. References

1. Gilligan PH, Schidlow DV. Clin Microbiol Newsl. 1984; 6: 42-44.

2. McKevitt AI, Woods DE. J Clin Microbiol. 1984; 19: 291-293.

3. Isles A, Maclusky I, Corey M, Gold R, Prober C, Fleming P, Levison H. J Pediatr. 1984; 104: 206-210.

4. Wu BJ, Thompson ST. Appl Environ Microbiol. 1984; 48: 743-746.

5. Gilligan PH, Gage PA, Bradshaw LM, Schidlow DV, DeCicco BT. J Clin Microbiol. 1985; 22: 5-8.

6. Pitt TL, Govan JRW. Pseudomonas cepacia and cystic fibrosis. PHLS Microbiology Digest. 1993; 10: 69-72.

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