MAST® Culture Media and Supplements

Technical Information Sheet

Product Code DM 630

Anaerobe Isolation Agar (AIA)

A general purpose medium for the isolation of fastidious anaerobes.

1. Description

Anaerobic bacteria are commonly found inhabiting the soft tissues of the body, particularly the oropharyngeal, intestinal and genitourinary tracts. They are opportunistic pathogens causing, often severe, infections in deeper tissues.

Although some anaerobic species are able to grow well on blood agar, various specifically enriched media have been recommended to produce optimal growth of the more fastidious anaerobes[1]. MAST Anaerobe Isolation Agar (AIA) has been developed to allow isolation of a wide range of clinically significant anaerobic bacteria by the inclusion in the formulation of a carefully balanced mix of peptones and glucose to provide a nutritionally rich environment. The medium also contains a buffering system to maintain physiological pH, various minerals essential for growth and L-cysteine which decreases the redox potential of the medium and also stimulates the growth of a number of organisms[2].

As anaerobic bacteria are often present in mixed infections their isolation is greatly aided by the addition of selective antibiotics such as neomycin or nalidixic acid (MAST Selective Supplements MS8, MS8A, SV8, MS9, MS9A, SV9).

*Formulation may be modified to meet performance criteria

2. Technical Formula*

Formula	grams per litre
Peptone mixture	23.0
Yeast extract	5.0
Soluble starch	3.0
Glucose	0.5
Di potassium phosphate	10.0
Monopotassium phosphate	1.0
Magnesium phosphate	1.0
Sodium chloride	0.2
Manganese sulphate	0.01
Cysteine hydrochloride	0.067
Ferrous sulphate	0.01
Tween 80	0.5
Agar	15.0
pH approx. 7.2	

3. Directions

1. Suspend by swirling 59.3g of powder in 1 litre of deionised water.

2. Autoclave at 121°C (15 psi) for 15 minutes.

3. Cool to 50 - 55°C and add 5 - 7% sterile defibrinated horse blood and selective supplements if required.

4. Mix well before pouring.

5. Dry plates before use.

4. In Use

Inoculate plates by streaking specimens over the surface of the medium and incubate at 37°C in an anaerobic atmosphere (typically 80% N, 10% H and 10% CO2). It is advisable to set up duplicate plates, one for examination after 24 hours, and the other to remain undisturbed for 72-96 hours.

If plates are examined after 24 hours (for rapidly growing anaerobes such as *Cl. Perfringens* or *B. fragilis*), exposure to oxygen must be minimised before re-incubation. Plates incorporating selective supplements generally require extended incubation and should be used with a parallel non-selective medium. After incubation the plates will darken, a normal effect of a reduced atmosphere on the blood. Colony size and appearance will vary from species to species.

5. References

1. Duerden BI. Gram-negative and non-spore forming anaerobes and mobiluncus. In Principles and practice of clinical microbiology. Emmerson AM, Hawkey PM Gillespie SH, editors. Chichester: John Wiley & Sons Ltd., 1997:641-661.

2. Holdemann LB, Cato EP, Moore WEC (editors). Anaerobe laboratory manual. Blacksburg: Virginia Polytechnic Institute and State University, 1977.

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