

Technical Information

Middlebrook 7H11 Agar Base w/o Malachite Green

Product Code: DM 1511A

Application: Middlebrook 7H11 Agar Base w/o Malachite Green is recommended for isolation, cultivation and determination of antimicrobial susceptibility of *Mycobacteri*.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	1.000
Ammonium sulphate	0.500
Monopotassium phosphate	1.500
Disodium phosphate	1.500
Sodium citrate	0.400
Magnesium sulphate	0.050
L-Glutamic acid	0.500
Ferric ammonium citrate	0.040
Pyridoxine	0.001
Biotin	0.0005
Agar	15.000
Final pH (at 25°C)	6.6±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Middlebrook 7H11 Agar Base w/o Malachite Green is a modification of Middlebrook 7H10 Agar ⁽¹⁾ used for the isolation, cultivation and sensitivity testing of *Mycobacterium tuberculosis*. Cohn et al ⁽²⁾ found that the addition of casein enzymic hydrolysate enhanced the growth of more fastidious *Mycobacterium tuberculosis* strains which was helpful also in doing drug susceptibility testing ⁽³⁾.

The media consists of many inorganic salts which help for growing *Mycobacteria*. Citric acid formed from sodium citrate helps in retaining inorganic cations in solution. Glycerol supplies carbon and energy. OADC Supplement contains oleic acid, bovine albumin, sodium chloride, dextrose and catalase. Oleic acid and other long chain fatty acids are metabolized by *Mycobacteria*. Dextrose is an energy source. Catalase neutralizes toxic peroxides, while albumin protects tubercle bacilli from toxic agents. Malachite green partially inhibits other bacteria.

Methodology

Suspend 10.25 grams of powder media in 450 ml distilled water containing 2.5 ml glycerol. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C. Aseptically add contents of 1 vial of Middlebrook OADC Growth Supplement (MS2018). Mix thoroughly before dispensing.

Quality Control

Physical Appearance

Light yellow to light green coloured homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel with greenish tinge

Reaction

Reaction of 2.05% w/v aqueous solution containing 0.5% glycerol at 25°C. pH : 6.6±0.2

pH Range:-

6.40-6.80

Cultural

Response/Characteristics

DM1511A: Cultural characteristics observed after an incubation at 35-37°C for 2-4 weeks.

Organism	Inoculum (CFU)	Growth
<i>Mycobacterium fortuitum</i> ATCC 6841	50-100	Good-luxuriant
<i>Mycobacterium smegmatis</i> ATCC 14468	50-100	Good-luxuriant
<i>M. tuberculosis H37RV</i> (25618)	50-100	Good-luxuriant

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Middlebrook and Cohn, 1958, Am. J. Public Health, 48:844.
2. Cohn [et.al](#), 1968, Am.Rev.Resp.Dis., 98:295.
3. MacFaddin J.F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore

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- User must ensure suitability of the product(s) in their application prior to use.
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