Technical Information

Dubos Oleic Broth Base

Product Code: DM 1839

Application: - Dubos Oleic Broth Base is used for cultivation of Mycobateria and for determining its sensitivity to chemotherapeutic agent.

Composition**

Ingredients	Gms / Litre
Ingredients	0.500
L-Asparagine	1.000
Monopotassium phosphate	1.000
Disodium phosphate	2.500
Ferric ammonium citrate	0.050
Magnesium sulphate	0.0 10
Calcium chloride	0.0005
Zinc sulphate	0.000 1
Copper sulphate	0.000 1
Final pH (at 25°C)	6.6±0.2

Principle & Interpretation

Tuberculosis remains a major public health problem worldwide. *Mycobacterium tuberculosis,* the causative agent of tuberculosis in man, is an airborne infection in which droplet nuclei are generated when patients with pulmonary tuberculosis cough. Infections occur when a susceptible person inhales the droplet nuclei containing bacterium [(1)]. Dubos Oleic Broth Base is recommended by Dubos and Middlebrook [(1)] for the primary isolation and subsequent cultivation of the tubercle bacilli. On comparative studies of various media, Dubos Oleic Agar Base was found to be superior to other media for the primary isolation of Mycobacteria [(2, 3)]. Mycobacteria grow very rapidly when inoculated in a broth media and therefore preliminary culture of all the test samples in a broth media is recommended. Dubos Oleic Broth Base contains casein enzymic hydrolysate and L-aspargine as sources of nitrogen. The phosphates (together with calcium chloride) buffer the media as well as serve as sources of phosphates. Magnesium sulphate, zinc sulphate, copper sulphate and ferric ammonium citrate provide trace metals and sulphates. Standard procedures for the isolation of Mycobacteria from test samples should be followed [(4)]. The specimen should be appropriately decontaminated before culturing as per standard methods [(4-7)] as described elese where. Proper biosafety procedures be taken while handling Mycobacterial cultures.

Methodology

Suspend 1 gram of powder media in 180 ml distilled water. Shake well & heat, if necessary, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50^{o} C and aseptically add 1 vial of sterile Oleic Albumin Supplement (MS2020) and 5000 to 10000 units of Penicillin. Mix well and dispense in sterile tubes.

Quality Control

Physical Appearance
Off-white to beige homogeneous free flowing powder

Colour and Clarity of prepared medium
Light amber coloured, clear to slightly opalescentsolution with a fine precipitate.

Reaction
Reaction of medium (0.5% w/v aqueous solution containing 0.1% MS2020) at 250C. pH: 6.6±0.2

pH range: 6.4-6.8

Cultural Response/Characteristics
DM 1879: Cultural characteristics observed with added Oleic Albumin Supplement (MS2020) and 5000-10,000 units of Penicillin, after an incubation at 35-37°C for 2-6 weeks.

Organism	Growth
Mycobacterium avium 5291)	Luxuriant
ycobacterium gordonae TCC 14470	Luxuriant
Mycobacterium kansasii ATCC 12478	luxuriant
Mycobacterium smegmatis ATCC 14468	luxuriant
Mycobacterium tuberculosis H37RV (25618)	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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Dubos R. J., and Middlebrook G., 1947, Am. Rev. Tuberc., 56:334.
2. Roberts A. H., Wallace R. J. and Erlich P., 1950, Am. Rev. Tuberc., 61:563.
3. Byham, 1950, Am. J. Clin. Pathol., 20:678
4. Kent and Kubica, 1985, Public Health Mycobacteriology : A Guide For the Level III Laboratory, USDHHS, Center for Disease Cont rol, Atlanta c.a.
5. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
6. Isenberg (Ed.), 1994, Clinical Microbiology Procedures Handbook, Suppl. 1., American Society for Microbiology, Washington, D. C.
7. Forbes B. A., Sahm A. S., and Weissfeld D. F., Bailey & Scotts Diagnostic Microbiology, 10th Ed., 1998, Mosby, Inc., St. Louis, Mo.

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