Technical Information

Bennet's Broth

Product Code: DM 2683

Application: - This medium is recommended for the cultivation and maintenance of species of *Nocardia, Streptomyces* and *Micromonospora*.

Composition**

Ingredients	Gms / Litre
Yeast extract	1.000
Beef extract	1.000
Casein enzymic hydrolysate	2.000
Dextrose	10.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Bennet's liquid medium (devoid of agar) is used for the enrichment of cultivation of Nocardiae (3) which eventually can be isolated on Bennet's agar (DM 2694). The medium contains nitrogenous nutrients such as yeast extract, beef extract and casein enzymic hydrolysate. They also serve as sources of carbon and essential growth factors. Dextrose is an energy source.

Aerobic actinomycetes are commonly termed nocardioform. These nocardioform bacteria include organisms that are recognized human pathogens, as well as several species that are primarily found in the environment (1) developments in cultivation and selective isolation procedures have yielded information on the occurrence, distribution, number and activity of Nocardiaceae family for cultivation of Nocardiae (2).

Nocardia are found worldwide in soil that is rich with organic matter. Most *Nocardia* infections are acquired by inhalation of the bacteria or through traumatic introduction. *Nocardia* are opportunistic pathogens, causing disease primarily among the young, the elderly, and those who are immunocompromised. *Nocardia* typically induce a pyogenic response with abscess formation. *Nocardia* cause disease in every region of the body. However, the regions of the body most affected are lungs, skin, eyes, and muscle (4). *Streptomycetes* are found predominantly in soil and in decaying vegetation, and most produce spores. *Streptomyces* are most commonly limited to causing actinomycotic mycetoma (5). Areas of the body more prone to formation of mycetomas are those that are frequently traumatized or that come into contact with soil. Developments in cultivation and selective isolation procedures have yielded information on the occurrence, distribution< (>, <)> number and activity of Nocardiaceae family members (6).

Methodology

Suspend 14 grams of dehydrated media in 1000 ml distilled water. Shake well and heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Dispense as desired.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity
Light yellow coloured clear solution

Reaction
Reaction of 1.4% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH Range
7.10-7.50

Cultural Response
DM 2683: Cultural characteristics observed after an incubation at 30°C for 24-48 hours.

Organism	**Growth**
Cultural Response	
Streptomyces griseus	luxuriant
Streptomyces lavendulae ATCC 8664	luxuriant
Nocordia salmonicolor	luxuriant

Storage and Shelf Life

Dried Media: Store below 30 °C in tightly closed container and prepared medium at 2-8 °C. Use before expiry date on label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Koneman E.W. et al, 1992, Colour Atlas and Textbook of Diagnostic Microbiology; 4th ed; pp: 501 - 502
2. Jones, K.L., 1949, J. Bacteriol. 57:141-145.,,
3. Bernaud. G et al, Sept 2005, Journal of Clinical Microbiology, Vol 43; 4895 – 4897; Copyright © 2005, ASM.
4. Murray P. R., Baron E. J., Jorgensen J. H, Pfaller M. A., Yolken R. H ., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.
5. Mahgoub E.S., 1990, Principles and Practice of Infectious Disease, 3rd Ed., Churchill Livingstone, New York. 6.Goodfellow M. and A.G. O Donnell, 1989, In: S. Baumberg, M. Rodes andI. Hunter (Ed) Microbial Products: New Approaches. Cambridge University Press, Cambridge. 343-383.

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