



Bennet's Broth

M1683

This medium is used 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

Directions

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

Principle And Interpretation

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 Nocardia family for cultivation of Nocardiae (2). 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 (M694).

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). *Streptomyces* 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 Nocardia family members (6).

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.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured clear solution

Reaction

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

pH

7.10-7.50

Cultural Response

M1683: Cultural characteristics observed after an incubation at 30°C for 24-48 hours.

Organism

Growth

Cultural Response

<i>Streptomyces griseus</i>	luxuriant
<i>Streptomyces lavendulae</i>	luxuriant
ATCC 8664	
<i>Nocardia salmonicolor</i>	luxuriant

Storage and Shelf Life

Store below 30 °C in tightly closed container and prepared medium at 2-8 °C. Use before expiry date on label.

Reference

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- 5.Mahgoub E.S., 1990, Principles and Practice of Infectious Disease, 3rd Ed., Churchill Livingstone, New York.
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