Antibiotic Assay Medium No.20 (Yeast Beef Broth)

M167

Antibiotic Assay Medium No. 20 is used for the microbiological assay of Amphotericin B using *Candida tropicalis* .

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Peptic digest of animal tissue (Peptone)	5.000
Yeast extract	6.500
Beef extract	1.500
Dextrose	11.000
Sodium chloride	3.500
Dipotassium phosphate	3.680
Monopotassium phosphate	1.320
Final pH (at 25°C)	6.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 42.5 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. Cool and dispense as desired.

Principle And Interpretation

Antibiotic Assay media are used in the performance of antibiotic assays. Grove and Randall have elucidated those antibiotic assays and media in their comprehensive treatise on antibiotic assays (1). Schmidt and Moyer have reported the use of antibiotic assay medium for the liquid formulation used in the performance of antibiotic assay (2). These media are prepared according in the USP (3) and by the FDA (4).

Antibiotic Assay Medium No. 20 is used for turbidometric assay of Amphotericin B using *Candida tropicalis* ATCC 13803 as test organism. This medium is also known as Yeast beef broth. This medium is also used in assaying mycostatic activity in pharmaceutical related preparations.

High nutritional content like peptic digest of animal tissue, yeast extract, beef extract and casein enzymic hydrolysate provides excellent medium for growth of *Candida tropicalis* . Dextrose provides carbon and energy for growth of the organism. Osmotic equilibrium to maintain cell intergrity and viability is provided by sodium chloride, while phosphate functions to provide proper buffering action.

Turbidimetric antibiotic assay is based on the change or inhibition of growth of a test microorganims in a liquid medium containing a uniform concentration of an antibiotic.After incubation of the test orgainism in the working dilutions of the antibiotics, the amount of growth is determined by measuring the light transmittance using spectophotometer. The concentration of antibiotic is determined by comparing amounts of growth obtained with that given by the reference standard solutions. Use of this method is appropriate only when test samples are clear.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Medium amber coloured clear solutiion

Reaction
Reaction of 4.25% w/v aqueous solution at 25°C. pH : 6.6±0.2

pH
6.40-6.80

Cultural Response

M167: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Growth	Serial dilution with
Candida tropicalis ATCC 13803	luxuriant	Amphotericin B

Storage and Shelf Life

Store below 30°C in tightly closed container and use freshly prepared medium . Use before expiry date on the label

Reference

1. Grove and Randall, 1955, Assay Methods of Antibiotics Medical Encyclopedia, Inc, New York.
2. Schmidt and Moyer, 1944; J. Bact, 47:199.
3. United States Pharmacopoeia/ National Formulary (USP 28/NF 23), 2005. US Pharmacopeial Convention Inc, Rockville, Md.
4. Tests and Methods of Assay of Antibiotics and Antibiotic containing Drugs, FDA, CFR, 1983. Title 21, part 436, Subpart D, Washington, D.C. U.S Government printing office, paragraphs 436, 100-436, 106 pg 242-259 (April 1).

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