



Antibiotic Assay Medium No.11

MU004

Antibiotic Assay Medium No.11 is used for microbiological assay of antibiotics in accordance with United States Pharmacopoeia.

Composition**

Ingredients	Gms / Litre
Peptone	6.000
Pancreatic digest of casein	4.000
Yeast extract	3.000
Beef extract	1.500
Dextrose	1.000
Agar	15.000
pH after sterilization	8.3±0.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.5 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates or as desired.

Advice: Recommended for the microbiological assay of Erythromycin, Gentamycin, Neomycin, Sisomycin, Netilmicin and Paromomycin .

Principle And Interpretation

This medium is formulated in accordance to USP and CFR; and is employed to analyze the neomycin content as per FDA and the USP (1,2). It is identical numerically with the name assigned by Grove and Randall (3). This medium provides a pH range of 8.3 while Antibiotic assay medium no.1 provides pH range of 6.5-6.7.

Peptone, pancreatic digest of casein, yeast and beef extract supply essential nutrients, vitamins, mineral, trace elements and growth factors. Dextrose in the medium serves as the carbon source for stimulating the growth of the test microorganism. Agar provides excellent medium for antibiotic diffusion and gives well defined zones of inhibition. Higher pH provides the optimal conditions for activity of antibiotic and also supports the growth of test organisms.

Freshly prepared plates should be used for antibiotic assays. Test organisms are inoculated in sterile seed agar pre-cooled to 40-45°C and spread evenly over the surface of solidified base agar. All conditions in the microbiological assay must be controlled carefully.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent gel forms in Petri plates.

pH of 3.05% w/v aqueous solution after sterilization.

pH

8.20-8.40

Growth Promotion Test

As per US Pharmacopoeia

Cultural Response

MU004: Cultural characteristics observed after an incubation at 32-35°C for 24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Antibiotics assayed
<i>Micrococcus luteus</i> ATCC 9341	50-100	luxuriant	>=70%	Erythromycin
<i>Staphylococcus epidermidis</i> ATCC 12228	50-100	luxuriant	>=70%	Gentamicin, Netilmicin, Neomycin, Sisomicin, Paromomycin

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. United States Pharmacopoeia 2011, US Pharmacopoeial Convention, Inc., Rockville, MD.
2. 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, p. 242-259, (April).
3. Grove and Randall, 1955, Assay Methods of Antibiotics Medical Encyclopedia, Inc. New York

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