Antibiotic Assay Medium No. 13

MU254

Intended Use:

Recommended for the turbidimetric microbiological assay of Candicidin using *Saccharomyces cerevisiae* as the test organism. It is in accordance with USP.

Composition**

Ingredients	g / L
Peptone	10.000
Dextrose (Glucose)	20.000
pH after sterilization	5.6±0.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.0 grams in 1000 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

This medium is formulated in accordance to USP and CFR (1,2) and is numerically identical with the name assigned by Groove and Rundall (3). Schmidt & Moyer has reported the use of antibiotic assay medium for liquid formulation in performance of antibiotic assay (4). This medium is widely used in turbidometric assay of antifungals like candicidin using test organism like *Saccharomyces cerevisiae*. The is medium is also termed as Sabouraud Liquid Broth Modified or Fluid Sabouraud Medium.

This medium facilitates enhanced growth of test organism *Saccharomyces cerevisiae* employed in assay of candicidin, a polyene antibiotic with antifungal activity. Assay is performed by enumerating the blastospores or by analysing the turbidity of the medium. Dextrose serves as carbon source and peptone provides essential nutrients and growth promoting factors. Optimal pH for growth of *Saccharomyces cerevisiae* is maintained in this medium.

Turbidimetric antibiotic assay is based on the change or inhibition of growth of a test microorganism in a liquid medium containing a uniform concentration of an antibiotic.

Type of specimen

Pharmaceutical samples.

Specimen Collection and Handling

After incubation of the test organism in the working dilutions of the antibiotics, the amount of growth is determined by measuring the light transmittance using spectrophotometer. 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. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Freshly prepared plates must be used or it may give erroneous results.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow coloured homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution without any precipitate

pH

5.50-5.70

Cultural Response

Cultural characteristics observed after an incubation at 29-31°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Serial dilution with
Saccharomyces cerevisiae ATCC 9763 (00058*)	50-100	luxuriant	Candicidin

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and use freshly prepared medium. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference

1. The United States Pharmacopoeia-National Formulatory (USP-NF), 2022.
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 1).
3. Grove and Randall, 1955, Assay Methods of Antibiotics, Medical Encyclopaedia, Inc. New York.
4. Schmidt and Moyer, 1944. J.Bact., 47:199.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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