



Antibiotic Assay Medium No. 13

MU254

Antibiotic Assay Medium No. 13 is used for the turbidimetric microbiological assay of Candicidin using *Saccharomyces cerevisiae* as the test organism and for studying the effectiveness of antibiotics on yeast and molds in accordance with United States Pharmacopeia.

Composition**

| Ingredients | Gms / Litre |
|------------------------|-------------|
| Peptone | 10.000 |
| Dextrose | 20.000 |
| pH after sterilization | 5.6±0.1 |

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30 grams in 1000 ml purified/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

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. 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.

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

MU254: Cultural characteristics observed after an incubation at 29-31°C for 18-48 hours.

| Organism | Inoculum (CFU) | Growth | Serial dilution with |
|--|----------------|-----------|----------------------|
| <i>Saccharomyces cerevisiae</i> ATCC 9763 | 50-100 | luxuriant | Candicidin |

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

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1. United States Pharmacopoeia / National Formulary 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 1).
 3. Grove and Randall, 1955, Assay Methods of Antibiotics, Medical Encyclopaedia, Inc. New York
 4. Schmidt and Moyer, 1944. J.Bact., 47:199.

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