Antibiotic Assay Medium No. 1 Slant

Intended Use
Antibiotic Assay Medium No. 1 Slant is used in the microbiological assay of beta-lactam and other antibiotics.

Summary
The potency or the activity of an antibiotic can be determined by chemical, physical and biological means. Biological tests offer the most convenient means of performing an assay, since a reduction in the antimicrobial activity of a specific antibiotic reveals changes not usually displayed by chemical methods. Antibacterial susceptibility testing may be performed by either dilution (turbidimetric) or diffusion methods. The choice of methodology is often based on many factors, including relative ease of performance, flexibility and use of automated or semi-automated devices for both identification and susceptibility testing. Grove and Randall have elucidated those antibiotic assays and media in their comprehensive treatise on antibiotic assays. Antibiotic Assay Medium No.1 is used in the microbiological assay of ß-lactam and other antibiotics. These media are prepared according to the specifications detailed in various pharmacopoeias and by the FDA.
Freshly prepared plates should be used for antibiotic assays. Test organisms are inoculated in sterile seed agar cooled to 40°C-45°C and spread evenly over the surface of solidified base agar. After incubation the concentration of the antibiotic being assayed is determined by measuring the zone of inhibition obtained, with that of reference standard antibiotic. All conditions in the microbiological assay must be carefully controlled. The use of standard culture media in the test is one of the important steps for good results.

Principle
Nutrients and growth factors are supplied by ingredients like Peptone, Pancreatic Digest of Casein, yeast extract and beef extract. Dextrose is supplemented as a carbon and energy source.
Cylinder Plate Assay: This method is based on the diffusion of an antibiotic solution from a cylinder placed on the surface of an inoculated agar medium. The diameter of a zone of inhibition after incubation depends, in part, on the concentration or activity of the antibiotic. This method is used in the assay of commercial preparations of antibiotics, as well as in the quantitative determination of antibiotics in body fluids, animal feeds and other materials.
Turbidimetric Assay: The turbidimetric method is based on the inhibition of growth of a microbial culture in a fluid medium containing a uniform solution of an antibiotic. Turbidimetric determinations have the advantage of requiring a short incubation period, providing test results after 3 or 4 hours. However, the presence of solvents or other inhibitory materials may influence turbidimetric assays more markedly than cylinder plate assays. Use of this method is appropriate only when test samples are clear.

Formula*
Ingredients	**g/L**
Peptone	6.0
Pancreatic Digest of Casein	4.0
Yeast Extract	3.0
Beef Extract	1.5
Dextrose	1.0
Agar	15.0
Final pH (at 25°C)	6.6 ± 0.2

*Adjusted to suit performance parameters.

Directions
1. Bring the Antibiotic Assay Medium No. 1 Slant to the room temperature 22°C-30°C.
2. Use Antibiotic Assay Medium No. 1 Slant as per required application.

Quality Control
Appearance: Yellow coloured, smooth slant.
Cultural Response: Cultural characteristics observed after an incubation at 30°C -35°C for 18 hours.

Organism (ATCC)	Growth
Bordetella bronchiseptica (4617)	Good
Escherichia coli (10536)	Good
Klebsiella pneumoniae subsp. *pneumoniae* (10031)	Good
Kocuria rhizophila (9341)	Good
Micrococcus luteus (10240)	Good
Pseudomonas aeruginosa (25619)	Good
Staphylococcus aureus (29737)	Good
Bacillus pumilus (14884)	Good
Bacillus spizizenii (6633)	Good
Bacillus cereus var mycoides (11778)	Good

Storage and Stability

1. Store the ready to use Antibiotic Assay Medium No. 1 Slant at 15°C-25°C in a cool, dry place away from light.
2. Stability of the kit is as per expiry date mentioned on the label.

Precautions / Limitations

In vitro diagnostic use only. 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 clinical specimens.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Pelczar M. J. Jr., Reid R. D., Chan E. C. S., 1977. Microbiology, 4th Edi, Tata McGraw-Hill Publishing Company Ltd, New Delhi.
2. The United States Pharmacopoeia, 2009. The U. S. Pharmacopoeial Convention, Rockville, MD.
3. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H., Yolken R. H., (Eds.), 2003. Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
4. Grove & Randall, 1955. Assay Methods of Antibiotics Medical Encyclopedia, Inc.New York.
5. European Pharmacopoeia, 2009. European Department, for the Quality of Medicines.
6. British Pharmacopoeia, 2009.The Stationery office British Pharmacopoeia.
7. Tests & Methods of Assay of Antibiotics & Antibiotic containing Drugs, FDA, CFR, 1983. Part 436(D), Washington, D.C.: U.S. Govt. Printing Office, paragraphs 436, 100-436, 106, p. 242- 259
8. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
203010440012	Ready Prepared Slant	12 Slants