

Technical Information

Antibiotic MiVeg Assay Medium No. 3 (Assay MiVeg Broth)

Product Code : VM1042

Application:- Antibiotic MiVeg Assay Medium No. 3 (Assay MiVeg Broth) is used for microbiological assay of antibiotics.

Composition

Ingredients	Gms / Litre
MiVeg peptone	5.000
MiVeg extract	1.500
Yeast extract	1.500
Dextrose	1.000
Sodium chloride	3.500
Dipotassium phosphate	3.680
Monopotassium phosphate	1.320
Final pH (at 25°C)	7.0±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Antibiotic MiVeg Assay Medium No.3 is prepared by vegetable based peptones instead of animal based peptones, which makes the medium BSE-TSE risks free. This medium serves the same purpose of Antibiotics Assay Medium No.3, used for the assay of various antibiotics. Grove and Randall have elaborately elucidated the methods to perform these assays and various media used for that (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 also recommended by USP and FDA generally in the turbidimetric antibiotic assay of Amikacin, Bacitracin, Kanamycin, Streptomycin and other antibiotics.

This medium is also used in the microbiological assay of different antibiotics in pharmaceutical and food products by the turbidimetric method. Ripperre et al reported that turbidimetric methods for determining the potency of antibiotics are inherently more accurate and more precise than agar diffusion procedures (2).

Turbidimetric antibiotic assay is based on the change or inhibition of growth of a test microorganisms in a liquid medium containing a uniform concentration of an antibiotic. The amount of growth is determined by measuring the light transmittance using spectrophotometer after incubation of the test organism in the working dilutions of the antibiotics. 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.

MiVeg Peptone, MiVeg extract and yeast extract provides essential nutrients and growth factors for enhanced microbial growth. Sodium chloride retains the cell viability and cell integrity as it maintains osmotic equilibrium in the medium. Phosphates in the medium provide good buffering action. Dextrose serves as the carbon and energy source. All conditions in the microbiological assay must be controlled carefully. The use of standard culture media in the test is one of the important steps for the good results.

Methodology

Suspend 17.5 grams of powder media in 1000 ml purified/distilled water. Mix thoroughly. Heat with frequent agitation to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Suggestion : This medium is recommended for the Microbiological assay of Amikacin , Bacitracin , Capreomycin , Chlortetracycline , Chloramphenicol , Cycloserine , Demeclocycline , Dihydrostreptomycin , Doxycycline , Gentamicin , Gramicidin , Kanamycin , Lincomycin , Meclocycline , Methacycline , Minocycline , Neomycin , Novobiocin , Oxytetracycline , Rolitetracycline , Spectinomycin , Streptomycin , Tetracycline , Tobramycin , Trolendomycin , Tyrothricin , Tylosin and Viomycin according to official methods .

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured clear solution in tubes

Reaction

Reaction of 1.75 % w/v aqueous solution at 25°C pH: 7.0±0.2

pH range

6.80-7.20

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 32-37°C for 18-24 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	Serial dilution with
<i>Escherichia coli</i> ATCC 10536	50-100	luxuriant	Chloramphenicol
<i>Klebsiella pneumoniae</i> ATCC 10031	50-100	luxuriant	Capreomycin, Dihydrostreptomycin, Streptomycin, Troleandomycin, Neomycin
<i>Enterococcus hirae</i> ATCC 10541	50-100	luxuriant	Gentamicin, Gramicidin, Neomycin, Novobiocin
<i>Staphylococcus aureus</i> ATCC 9144	50-100	luxuriant	Tylosin
<i>Staphylococcus aureus</i> ATCC 29737	50-100	luxuriant	Amikacin, Chlortetracycline, Cycloserine, Demeclocycline, Doxycycline, Kanamycin, Kanamycin sulphate, Methacycline, Oxytetracycline, Rolitetracycline, Tetracycline, Tobramycin, Tylosin

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Grove and Randall, 1955, Assay Methods of Antibiotics Medical Encyclopedia, Inc. New York.
2. Rippere R. A.. Some principles of microbiological turbidimetric assays of antibiotics. J. Assoc. off. Anal. Chem. 1979 62(4):951-6.



Dehydrated Culture Media
Bases / Media Supplements

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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