

Antibiotic Medium N° 3

Cat. 1534

Standard medium for use in antibiotic assays.

Practical information

Applications	Categories
Antibiotic Assay	General use

Industry: Pharmaceutical/Veterinary

Regulations: USP / European Pharmacopoeia

Principles and uses

Antibiotic Medium N° 3 is a standard medium prepared for use in antibiotic assays.

The activity (potency) of an antibiotic can be demonstrated under suitable conditions by its inhibitory effect on microorganisms. Reduction in antimicrobial activity may reveal changes not demonstrated by chemical methods.

Antibiotic Medium N° 3 can be used with the following microbiological methods for Antibiotic Assays:

1. Serial dilution method.
2. Turbidimetric method.

Antibiotic Medium N° 3 is used in the potency assay for penicillin, erythromycin, neomycin, chlortetracycline and chloramphenicol etc

This medium can also be used in the turbidimetric determination. 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. Use of this method is appropriate only when test samples are clear.

Peptone, yeast extract and beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Potassium phosphates act as a buffer system. Glucose is the fermentable carbohydrate providing carbon and energy. Bacteriological agar is the solidifying agent.

Formula in g/L

Beef extract	1,5	Dipotassium phosphate	3,68
Glucose monohydrate	1	Monopotassium phosphate	1,32
Peptone	6	Sodium chloride	3,5
Yeast extract	3		

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 20 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize at 121 °C for 15 minutes. Distribute into appropriate containers.

Instructions for use

Turbidimetric assay:

- Wash the growth of a fresh slant agar with the Antibiotic Medium N° 3.
- Dilute the broth as required.
- Following the reference procedures, prepare working dilutions of the antibiotic reference standard in specific concentrations.
- Incubate tubes at 35 °C for 3-4 hours and then stop the growth with a 0,5 ml of 1:3 diluted formalin.
- Read with a suitable spectrophotometer and compare the growth with the given reference standard solutions.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Clear amber	7,0±0,2

Microbiological test

Incubation conditions: (35-37 °C / 24-48 h).

Microorganisms	Specification
Staphylococcus aureus ATCC 9144	Good growth
Klebsiella pneumoniae ATCC 10031	Good growth
Escherichia coli ATCC 10536	Good growth
Enterococcus hirae ATCC 10541	Good growth
Staphylococcus aureus ATCC 6538	Good growth
Escherichia coli ATCC 9637	Good growth

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

Grove and Randall. Assay Methods of Antibiotics, Medical Encyclopedia Inc. New York 1955. United States Pharmacopoeia Convention. 1955. The United States Pharmacopoeia, 23rd Ed. Biological Tests and Assays, p. 1690-1696. The United States Pharmacopoeia Convention, Rockville, Md.