

Antibiotic Medium N° 10 EP/USP

Cat. 1537

For the test of polymixin.

Practical information

Applications	Categories
Antibiotic Assay	Polymixin

Industry: Pharmaceutical/Veterinary

Regulations: USP / European Pharmacopoeia

Principles and uses

Antibiotic Medium N° 10 is the standard agar base used for the microbiological assay of antibiotics like polymixin.

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. The antibiotic media are identified numerically with names assigned by Grove and Randall in "Assay methods of antibiotics". The use of standardized culture media and strict control of all test conditions are essential requirements in the microbiological assay of antibiotics in order to obtain satisfactory test results.

This medium is recommended by USP and the European pharmacopoeia. Polymixin assay is carried out using the cylinder plate method.

Formula in g/L

Dextrose	2,5	Enzymatic digest of casein	17
Bacteriological agar	15	Dipotassium phosphate	2,5
Polysorbate 80	10	Sodium chloride	5
Soy peptone	3		

Preparation

Suspend 55,0 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 in autoclave at 121 °C for 15 minutes. Cool to 45-50 °C, mix well and dispense into plates

Instructions for use

- Liquefy the medium and inoculate it at a suitable temperature, for the example 48 °C to 50 °C, with a known quantity of a suspension of microorganism sensitive to the antibiotic to be examined.
- Agitate the mixture gently to produce a homogeneous distribution and immediately pour into Petri dishes a quantity of the inoculated medium to form a layer 2-5 mm thick. Alternatively, the medium may consist of 2 layers, only the upper layer being inoculated.
- Prepare a solution of the reference substance and of the antibiotic to be examined having known concentrations and presumed to be equal activity.
- Apply the solutions to the surface of the medium, for example, in sterile cylinders of porcelain, stainless steel, or in cavities prepared in the agar.
- The same volume of the solution must be added to each cylinder or cavity.
- Alternatively, use a sterile absorbent paper disc, impregnate the discs with the solutions of the reference substance or the solutions of the antibiotics to be examined and place on the surface of the agar.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Light amber, slightly opalescent	7,3 ± 0,1

Microbiological test

Incubation conditions: (35±2 °C / 40-48 h).

Microorganisms

Escherichia coli ATCC 10536

Bordetella bronchiseptica ATCC 4617

Specification

Good growth

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.