

ANTIBIOTIC AGAR N.1

Medium for determining antibiotic potency by the cylinder plates assay technique.

TYPICAL FORMULA (g/l)

Beef Extract	1.5
Yeast Extract	3.0
Pancreatic Digest of Casein	4.0
Peptone	6.0
Dextrose	1.0
Agar	15.0

Final pH 6.55 ± 0.05 at 25°C

DESCRIPTION

ANTIBIOTIC AGAR N.1 is a medium used for determining antibiotic potency by the cylinder plates assay technique. The medium meets United States Pharmacopeia (USP) performance specifications.

PRINCIPLE

The activity (potency) of an antibiotic can be demonstrated under suitable conditions by its inhibitory effect on microorganisms. Antibiotic assay are performed by the cylinder plated method on agar medium or by the turbidimetric "tube" assay in a fluid medium.

The Cylinder Plate Assay method is based on the diffusion of an antibiotic solution from a cylinder 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.

PREPARATION

Suspend 30.5 g of powder in 1 litre of distilled or deionized water. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Autoclave at 121°C for 15 minutes. Distribute into final containers.

TECHNIQUE

Test Organism Preparation

Prepare the inoculum for assay by washing growth from a fresh 24-48 hours agar slant using sterile purified water and further dilute the culture to obtain the desired organism concentration.

Cylinder Plate assay

Use 20 x 100 mm glass or plastic Petri dishes with sufficient depth so that cylinders used in the assay will not be pushed into the medium by the cover.

Use stainless steel or porcelain assay cylinders having the following dimensions (± 0.1 mm): 8 mm outside diameter, 6 mm inside diameter and 10 mm long.

To assure accurate assays, work on a level surface to obtain uniformly thick base and seed layers in the Petri dish. Allow the base layer to solidify and then overlay the seed layer containing a proper concentration of the test organism. The amount of medium in the layers varies for different antibiotics, with most assays specifying a 21 ml base layer and a 4 ml seed layer. In any case, dishes with flat bottoms are required to assure complete coverage of the bottom of the dish when small amounts of base medium are used. Tilt the plate to obtain even coverage of the base layer by the seed layer and allow it to solidify in a level position. Plates should be used the same day as prepared.

INTERPRETATION OF RESULTS

Refer to appropriate procedures for results.

STORAGE

The powder is very hygroscopic, store the powder at 10-30°C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident. Store prepared plates at 2-8°C away from light.

WARNING AND PRECAUTIONS

The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous, it is nevertheless recommended to consult the safety data sheet for its correct use. The product must be used only by properly trained operators.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES

1. Grove and Randall (1955) Assay methods of antibiotics. Medical Encyclopedia, Inc. New York, N.Y.
2. United States Pharmacopeial Convention, Inc. (2008) The United States pharmacopeia 31/The national formulary 26, Supp. 1,8-1-08, online. United States Pharmacopeial Convention, Inc., Rockville, Md.
3. Horwitz (ed.) (2007) Official methods of analysis of AOAC International, 18th ed., online. AOAC International, Gaithersburg, Md.
4. Abraham, Chain, Fletcher, Florey, Gardner, Heatley and Jennings (1941) Lancet ii:177.
5. Council of Europe (2002) European Pharmacopeia 4th ed. Council of Europe, Strasbourg, France



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PRODUCT SPECIFICATIONS

NAME

ANTIBIOTIC AGAR N.1

PRESENTATION

Dehydrated medium

STORAGE

10-30°C

PACKAGE

Ref.	Content	Packaging
610314	500 g	500 g of powder in plastic bottle

pH OF THE MEDIUM

6.55 ± 0.05

USE

ANTIBIOTIC AGAR N.1 is a medium used for determining antibiotic potency by the cylinder plates assay technique. The medium meets United States Pharmacopeia (USP) performance specifications

TECHNIQUE

Refer to technical sheet of the product

APPEARANCE OF THE MEDIUM

Dehydrated medium

Appearance: free-flowing, homogeneous

Colour: beige

Prepared medium

Appearance: slightly opalescent

Colour: light to medium amber

SHELF LIFE

4 years

QUALITY CONTROL

- Control of general characteristics, label and print
- Microbiological control
Inoculum for productivity: 30-300 CFU/ml
Incubation conditions: 18-24 h at 35 ± 2°C










Microorganism

Staphylococcus aureus ATCC® 6538P

Growth

Good

TABLE OF SYMBOLS

 LOT	Batch code	 Keep away from heat sources	 Manufacturer	 Use by	 Fragile, handle with care
 REF	Catalogue number	 Temperature limitation	 Contains sufficient for <n> tests	 Consult instruction for use	



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