



Antibiotic Assay Medium No- 3

RDM-AAM-03

Principle

The media is composed according to the USP, recommended as antibiotic assay medium. It is composed of peptone, yeast extract, meat extract, sodium chloride, dextrose, dibasic potassium phosphate and monobasic potassium phosphate. Peptone, yeast extract and meat extract provide nitrogen, carbon, vitamins essential nutrients. Sodium chloride maintains osmotic balance in medium. Dextrose serves as energy source. Dibasic and monobasic potassium phosphate acts as buffering agent. The media is used for estimating the concentration of antibiotic by biological assay or turbidimetric antibiotic assay for clear solution only. A uniform concentration of microorganism suspension is inoculated in series of antibiotic assay medium (5-10 ml) containing working dilution of antibiotic (varying concentration of antibiotic). After incubation, the amount of growth is determined by measuring the light transmittance using spectrophotometer. The concentration of antibiotic is estimated by associating amounts of growth obtained with the given by the reference standard solutions.

Use: Recommended as the medium for biological assay and turbidimetric or serial dilution assay of a wide variety of antibiotics in accordance with United States Pharmacopoeia.

Contents*

Ingredients	Gram/Litre
Peptone	5.000
Yeast Extract	1.500
Meat Extract#	1.500
Sodium Chloride	3.500
Dextrose	1.000
Dibasic Potassium Phosphate	3.680
Monobasic Potassium Phosphate	1.320
pH at 25°C	7.0 ±0.05

* Formula adjusted for optimum performance and parameters

Equivalent of Beef Extract

Directions: Dissolve 17.50 grams in 1000 ml distilled water. Boil to dissolve the medium completely and distribute in test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and add desired amount of antibiotic solution in it and inoculate uniform volume of bacterial suspension in series of tubes.

Specimens types analyzed

Recommended for clear solutions only *etc.*

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Beige colored free flowing, homogeneous powder
Reaction of 1.75% solution	7.0 ±0.05 at 25 °C
pH	6.95- 7.05
Color and clarity of ready medium	Light amber colored opalescent solution
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response

Cultural characteristics observed after incubation at 33-37 °C for 18-24 hrs.

Organism	ATCC	Inoculum	Growth	Serial dilution with
<i>Escherichia coli</i>	8739	50-100	Luxurious	Chloramphenicol
<i>Staphylococcus aureus</i>	6538	50-100	Luxurious	Kanamycin, Tetracycline
<i>Bacillus subtilis</i>	6633	50-100	Luxurious	---
<i>Salmonella typhimurium</i>	14028	50-100	Luxurious	----

Storage and Shelf Life

Hygroscopic; keep container tightly closed. Store in cool dry place.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.
2. *Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.
3. *The United States Pharmacopoeia*, (2014), The United States Pharmacopoeial Convention. 12601 Twinbrook Parkway, Rockville, MD 20852.

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