TM 1734 – ANTIBIOTIC ASSAY MEDIUM NO. 3 (as per USP)

INTENDED USE

For turbidimetric or serial dilution assay of various antibiotics.

PRODUCT SUMMARY AND EXPLANATION

Grove and Randall have elucidated the antibiotic assays and medias in their comprehensive treatise on antibiotic assays. Antibiotic assay Medium No. 3 is used as the broth medium in turbidimetric or serial dilution assay of a wide variety of antibiotics. This medium is formulated in accordance with The United States Pharmacopoeia.

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

COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Yeast extract	1.500
Beef extract	1.500
Dextrose	1.000
Sodium chloride	3.500
Dibasic potassium phosphate	3.680
Monobasic potassium phosphate	1.320

PRINCIPLE

Peptone, beef extract and yeast extract provide essential nutrients and growth factors for enhanced microbial growth. Sodium chloride maintains the osmotic equilibrium and retains the cell viability and cell intergrity. Phosphates in the medium provide good buffering action. Dextrose serves as the carbon and energy source for luxuriant growth.

INSTRUCTION FOR USE

- Dissolve 17.5 grams in 1000 ml purified/distilled water.
- Heat if necessary to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

Advice: Recommended for the Microbiological assay of Amikacin, Capreomycin, Chloramphenicol, Chlortetracycline, Cycloserine, Demeclocycline, Dihydrostreptomycin, Doxycycline, Gramicidin, Kanamycin, Methacycline, Oxytetracycline Rolitetracycline, Streptomycin, Tetracycline, Tobramycin and Troleandomycin according to official methods.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium	: Light yellow coloured clear solution in tubes.
pH (at 25°C)	: 7.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

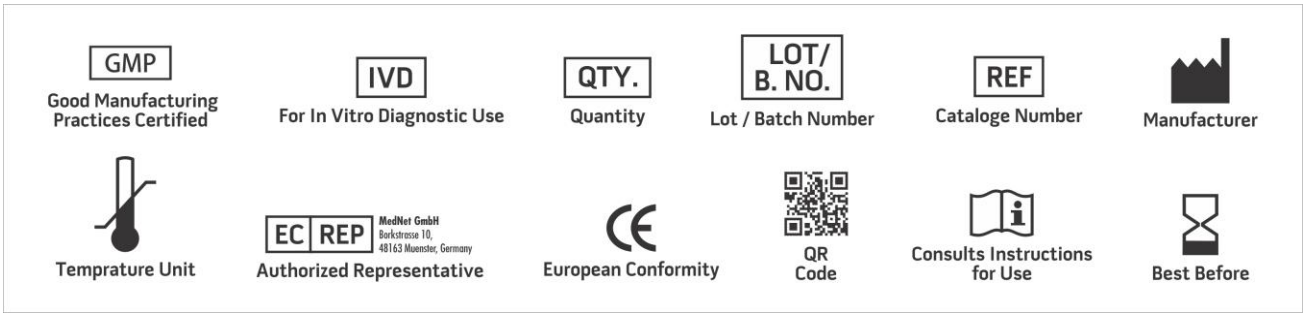
Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Serial dilution with	Incubation Temperature	Incubation Period
Escherichia coli	10536	50-100	Luxuriant	Chloramphenicol	32-35°C	24 Hours
Klebsiella pneumoniae	10031	50-100	Luxuriant	Capreomycin, Dihydrostreptomycin, Streptomycin, Troleandomycin	36-37.5°C	16-24 Hours
Staphylococcus aureus	29737	50-100	Luxuriant	Amikacin, Chlortetracycline, Cycloserine, Demeclocycline, Doxycycline, Kanamycin,,, Lincomycin, Methacycline, Oxytetracycline, Rolitetracycline , Tetracyclin, Tobramycin	32-35°C	24 Hours
Enterococcus hirae	10541	50-100	Luxuriant	Gramicidin	36-37.5°C	16-18 Hours
Staphylococcus aureus	9144	50-100	Luxuriant	Tylosin	35-39°C	16-18 Hours

PACKAGING:
In pack size of 100 gm and 500 gm bottles.

STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL
After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES
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.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019