Technical Information

Antibiotic Assay Medium A

Product Code: DM 1003M

Application: - Antibiotic Assay Medium A is recommended for microbiological assay of ß-lactam and other antibiotics as per the specification of Indian Pharmacopoeia.

Composition**

Ingredients	Gms / Litre
Peptone	6.000
Tryptone # #	4.000
Yeast extract	3.000
Meat extract B #	1.500
Dextrose	1.000
Agar	15.000
pH after sterilization	6.55±0.05

**Formula adjusted, standardized to suit performance parameters

Pancreatic digest of casein

Equivalent to Beef extract

Principle & Interpretation

Antibiotic Assay Medium A is widely employed as seed agar in the preparation of plates for microbiological agar diffusion assays by FDA cylinder plate method for wide variety of antibiotics. It is also used as inoculum and maintenance medium for several test organisms. Composition of this medium is in accordance to Indian Pharmocopeia (1) and CFR (2)

Essential nutrients, vitamins, mineral, trace elements and growth factors are supplied by peptone, tryptone yeast extract and meat extract B. Dextrose in the medium act as the carbon source for enhancing the growth of the test microorganism. Agar provides excellent medium for antibiotic diffusion and gives well defined zones of inhibition.

Freshly prepared plates should be used for antibiotic assays. Test organisms are inoculated in sterile seed agar cooled to 40-45°C and spread evenly over the surface of solidified base agar. All conditions in the microbiological assay must be controlled carefully. The use of standard culture media in the test is one of the important step for the good results.

Methodology

Suspend 30.5 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly and heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Advice : *Recommended for the microbiological assay of Bacitracin, Novobiocin, Streptomycin,Vancomycin and Netilmicin sulphate and as a maintenance medium for the assay of Amikacin, Bacitracin, Carbenicillin, Capreomycin, Chlortetracycline,Colistimethate sodium,Colistin sulphate, Doxycycline, Erythromycin, Framycetin, Gentamicin, Gramicidin, Kanamycin B sulphate, Neomycin,Netilmicin sulphate, Novobiocin, Oxytetracycline, Polymyxin-B, Sisomicin,Spiramycin, Streptomycin, Teicoplanin, Tetracycline, Tobramycin, Tylosin, Tyrothricin, Vancomycin.*

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder.

Gelling
Firm, comparable with 1.5% Agar gel.

Colour and Clarity
Yellow coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 3.05% w/v aqueous solution. pH : 6.55±0.05

pH Range
6.50-6.60

Growth Promotion Test
As per Indian Pharmacopoeia

Cultural Response
DM 1003M: Cultural characteristics observed after an incubation at specified temperature for specified period.

Organism	Inoculum (CFU)	Growth	Inoculum medium	Antibiotics assayed	Incubation temperature / period
Cultural Response					
Bordetella bronchiseptica ATCC 4617	50-100	good-luxuriant	Polymyxin B		32-35°C/ 24 hours
Bacillus cereus var mycoides ATCC 11778	50-100	good-luxuriant	Oxytetracycline , Tetracycline		32-35°C/ 5 days
Bacillus pumilis ATCC14884	50-100	good-luxuriant	Chlortetracycline, Framycetin, Kanamycin sulphate		32-35°C/ 5days
Bacillus subtilis ATCC 6633	50-100	good-luxuriant	Streptomycin	Streptomycin	32-35°C/ 5days
Klebsiella pneumoniae ATCC 10031	50-100	good-luxuriant	Streptomycin, Capreomycin		36-37°C/ 24 hours
Micrococcus luteus ATCC 9341	50-100	good-luxuriant	Erythromycin		32-35°C/ 24 hours
Micrococcus luteus ATCC10240	50-100	good-luxuriant	Bacitracin	Bacitracin	32-35°C/ 24 hours
Pseudomonas aeruginosa ATCC 25619	50-100	good-luxuriant	Carbenicillin		36-37.5°C/ 24 hours
Staphylococcus aureus ATCC 29737	50-100	good-luxuriant	Amikacin, Doxycycline, Kanamycin sulphate, Oxytetracycline, Tetracycline, Tobramycin, Tylosin		32-35°C/ 24 hours
Staphylococcus aureus ATCC 6538	50-100	good-luxuriant	Gramicidin, Netilmicin sulphate		32-35°C/ 24hours
Staphylococcus epidermidis ATCC 12228	50-100	good-luxuriant	Novobiocin, Gentamicin, Neomycin Sisomicin		32-35°C/ 24hours

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use freshly prepared medium. Use before expiry date on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. European Pharmacopoeia, 2011, European Department, for the Quality of Medicines.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate
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