Technical Information

Antibiotic Assay Medium No. 11,, (Neomycin, Erythromycin Assay Agar) (Erythromycin Seed Agar)

Product Code :DM 1004

Application: Antibiotic Medium No.11 (Neomycin, Erythromycin Assay Agar) is used for microbiological assay of antibiotics.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue (Peptone)	6.000
Casein enzymic hydrolysate	4.000
Yeast extract	3.000
Beef extract	1.500
Dextrose	1.000
Agar	15.000
Final pH (at 25°C)	8.3±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Antibiotic Assay media are used in the performance of antibiotic assays. Grove and Randall have elucidated those antibiotic assays and media in their comprehensive treatise on antibiotic assays [1]. Schmidt and Moyer have reported the use of antibiotic assay medium for the liquid formulation used in the performance of antibiotic assay [2]. These media are recommended by USP [3] and FDA [4].

Nutrients and growth factors are supplied by the ingredients like peptic digest of animal tissue, casein enzymic hydrolysate, yeast extract and beef extract. Dextrose provides the carbon and energy source. Agar provides excellent medium for antibiotic diffusion and gives well-defined zones of inhibition. Higher pH provides the optimal conditions for activity of antibiotic and also supports the growth of the test organisms.

Freshly prepared plates should be used for antibiotic assays. Test organisms are inoculated in sterile seed agar pre-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.

Methodology

Suspend 30.5 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm,comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.05% w/v aqueous solution at 25°C. pH : 8.3±0.2

pH range 8.10-8.50

Cultural Response

DM 1004: Cultural characteristics was observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum(CFU)	Growth	Recovery	Antibiotics assayed
Micrococcus luteus ATCC 9341	50-100	luxuriant	>=70%	Erythromycin While assaying Tylosin, Tylosin tartarate,Vancomycinhydrochloride, adjust the pH to8.0±.0.2
Staphylococcus aureus ATCC 6538p	50-100	luxuriant	>=70%	Kanamycin monosulphate,Kanamycin acid sulphate, Netilmicin sulphate
Staphylococcus epidermidis ATCC 12228	50-100	luxuriant	>=70%	Gentamicin, Neomycin,Netilmicin, Paromomycin, Sisomycin
Bacillus pumilis ATCC 14884	50-100	luxuriant	>=70%	Chlortetracycline ,Framycetin Kanamycin sulphate
Bacillus subtilis ATCC 6633	50-100	luxuriant	>=70%	Dihydrostreptomycin sulphate, Erythromycin estolate,Kanamycin monosulphate, Kanamycin acidsulphate,Spiramycin,Streptomycinsulphate
Bacillus subtilis NCTC 8236	50-100	luxuriant	>=70%	Dihydrostreptomycin sulphate Streptomycin sulphate
Bacillus subtilis NCTC 8241	50-100	luxuriant	>=70%	Erythromycinestolate,Gentamicin sulphate

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Grove and Randall, 1955, Assay Methods of Antibiotics Medical Encyclopedia, Inc, New York.
2. Schmidt and Moyer, 1944; J. Bact, 47:199.
3. United States Pharmacopoeia 2009, US Pharmacopoeial Convention Inc, Rockville, MD
4. Tests and Methods of Assay of Antibiotics and Antibiotic containing Drugs, FDA, CFR, 1983. Title 21, part 436, Subpart D, Washington, D.C. U.S Government printing office, paragraphs 436, 100-436, 106 pg 242-259 (April 1).

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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