Technical Information

Antibiotic Assay Medium No. 10 (Polymyxin Seed Agar)

Product Code: DM1225

Application: - Antibiotic Assay Medium No. 10 (Polymyxin Seed Agar) is used as seed layer medium for assaying the products containing Polymyxin B, also for assaying Carbenicillin, Colistin and Colistimethate Sodium and Polymyxin B.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	17.000
Papaic digest of soyabean meal	3.000
Sodium chloride	5.000
Dextrose	2.500
Dipotassium phosphate	2.500
Agar	12.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Antibiotic Assay media are used for performing antibiotic assays. Grove and Randall have elucidated 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]. 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. After incubation the concentration of the antibiotic being assayed is determined by measuring the zone of inhibition obtained, with that of reference standard antibiotic. All conditions in the microbiological assay must be carefully controlled. The use of standard culture media in the test is one of the important steps for good results.

Nutrients and growth factors are supplied by the ingredients like casein enzymic hydrolysate and papaic digest of soyabean meal. Sodium chloride maintains the osmotic equilibrium. Dipotassium phosphate provides the buffering system. Dextrose serves as the source of energy.

Methodology

Suspend 42 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Add 10 ml Polysorbate 80. 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 1.2% Agar gel.

Colour and Clarity of prepared medium
Medium amber coloured clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 4.2% w/v aqueous solution containing 1% polysorbate 80 at 25°C. pH : 7.2±0.2

pH range 7.00-7.40

Cultural Response/ characteristices

DM 1225: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	antibiotics assayed
Bordetella bronchiseptica ATCC 4617	50-100	luxuriant	>=70%	Polymyxin B,Colistimethate sodium,Colistin
Pseudomonas aeruginosa ATCC *25619*	50-100	luxuriant	>=70%	Carbenicillin

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° 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.