Technical Information

Antibiotic Assay Medium C

Product Code: DM 1555B

Application: - Antibiotic Assay Medium C is recommended as the broth medium in turbidimetric assay of a wide variety of antibiotics as per the specification of British Pharmacopoeia.

Composition**

Ingredients	Gms / Litre
Peptone	6.000
Beef extract	1.500
Yeast extract	3.000
Sodium chloride	3.500
Glucose monohydrate	1.000
Dipotassium hydrogen phosphate	3.680
Potassium dihydrogen phosphate	1.320
pH after sterilization	*7.0±0.1

**Formula adjusted, standardized to suit performance parameters

* *While assaying Josamycin & Josamycin sulphate adjust the pH to 8.0 ±0.1*

Principle & Interpretation

Antibiotic Assay Medium C is used in turbidimetic assay of several antibiotics. The composition of the medium is in accordance to the specifications detailed in the British Pharmacopoeia (1). Turbidimetric methods for determining the potency of antibiotics are inherently more accurate and more precise than comparable agar diffusion procedures (2)

Peptone, beef extract and yeast extract supply essential nutrients and growth factors to enhanced the microbial growth in the medium. Sodium chloride maintains the osmotic equilibrium while phosphates are incorporated in the medium to provide good buffering action. Glucose monohydrate act as the carbon and energy source for faster growth.

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 (3). Use of this method is appropriate only when test samples are clear.

Methodology

Suspend 19.9 grams of dehydrated media powder in 1000 ml distilled water. Mix thoroughly and heat with frequent agitation to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Adjust the pH of the medium, using freshly prepared buffer solution as recommended by the British pharmacopoeia for the antibiotic assayed.

Advice: *Recommended for the microbiological assay of Colistimethate sodium, Dihydrostreptomycinsulphate, Erythromycin estolate, Erythromycin ethylsuccinate, Framycetin sulphate, Gentamicin sulphate, Gramicidin, Kanamycin acid sulphate,Kanamycin monosulphate, Neomycin sulphate,Rifamycin sodium, Spiramycin, Streptomycin sulphate, Tylosin, Tylosin tartarate, Tyrothricin and Vancomycin hydrochloride according to British Pharmacopoeia.*

Quality Control

Appearance
Cream to yellow coloured homogeneous free flowing powder

Colour and Clarity
Light yellow coloured clear solution without any precipitate

pH Range
6.90-7.10

Cultural Response
DM1555B: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours. (Key: 1.* - While assaying Josamycin and Josamycin sulphate adjust the pH of the medium to 8.0 ± 0.1 2.# - While assaying Vancomycin hydrochloride, the incubation temperature is maintained at 37-39°C)

Organism	Inoculum (CFU)	Growth	Serial dilution with
Escherichia coli ATCC 9637	50 -100	luxuriant	Colistimethate sodium
Escherichia coli ATCC 10536	50 -100	luxuriant	Rifamycin sodium
Enterococcus hirae ATCC 10541	50 -100	luxuriant	Gramicidin, Tyrothricin
Klebsiella pneumoniae ATCC 10031	50 -100	luxuriant	Dihydrostreptomycin sulphate, Streptomycin sulphate
Staphylococcus aureus ATCC 6538p	50 -100	luxuriant	Erythromycin estolate, Erythromycin ethylsuccinate, Erythromycin stearate, Framycetin sulphate, Gentamicin sulphate, Gramicidin, Kanamycin monosulphate, Kanamycin acid sulphate, Neomycin sulphate, Spiramycin, Tobramycin,*Josamycin, Josamycin propionate,#Vancomycin hydrochloride
Staphylococcus aureus ATCC 9144	50 -100	luxuriant	Tylosin, Tylosin tartarate

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. British Pharmacopoeia, 2011, TheStatinery Office, British Pharmacopoeia
2. Rippere RA. Some principles of microbiological turbid metric assays of antibiotics. J Assoc Off Anal Chem.1979 62(4):951-6.
3. Chapin-Robertson and Edberg, 1991, Measurement of Antibiotics in Human Body fluids: Techniques and significance. Antibiotics in Laboratory medicine, New York pp 305

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