



Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Antibiotic Assay Medium C

Product Code: DM 1555

Application: - Antibiotic Assay Medium C is used as the broth medium in turbidimetric assay of a wide variety of antibiotics.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue (Peptone)	6.000
Beef extract	1.500
Yeast extract	3.000
Sodium chloride	3.500
Dextrose	1.000
Dipotassium phosphate	3.680
Monopotassium phosphate	1.320
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

This medium is used in turbidometric assay of several antibiotics. The composition of the medium is in accordance with the specifications detailed in the European and British Pharmacopeia ^(1, 2). For determining the potency of antibiotics Turbidimetric methods are more accurate and precise than agar diffusion procedures ⁽³⁾.

Peptic digest of animal tissue, beef extract and yeast extract provides essential nutrients and growth factors for enhanced microbial growth. Sodium chloride maintains the osmotic equilibrium while phosphates are incorporated in the medium to provide good buffering action. Dextrose serves as the carbon and energy source for faster growth.

Turbidimetric antibiotic assay is based on the change or inhibition of growth of a test microorganisms in a liquid medium containing a uniform concentration of an antibiotic ⁽⁴⁾. Use of this method is appropriate only when test samples are not turbid.

Methodology

Suspend 20 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. Note: Adjust the medium pH to 8.0±0.2 for assaying Josamycin and Josamycin sulphate.

Advice : Recommended for the microbiological assay of Colistimethate sodium, Dihydrostreptomycin sulphate, Erythromycin estolate, Framycetin sulphate, Gentamicin sulphate, Gramicidin, Kanamycin acid sulphate, Kanamycin monosulphate, Neomycin sulphate, Rifamycin

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured clear solution without any precipitate

Reaction

Reaction of 2.0% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range 6.80-7.20





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Cultural Response/ characteristics

DM 1555: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Serial dilution with
Escherichia coli ATCC 25922	50-100	luxuriant	Colistimethate sodium, Rifamycin sodium
Escherichia coli ATCC 9637	50-100	luxuriant	Colistimethate sodium, Rifamycin 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 25923	50-100	luxuriant	Erythromycin estolate, Framycetin sulphate, Genatamicin sulphate, Gramicidin, Kanamycin monosulphate, Kanamycin acid sulphate, Neomycin sulphate, Spiramycin, Tylosin, Tylosin hydrochloride, Vancomycin hydrochloride. While assaying Josamycin and Josamycin sulphate adjust the pH of the medium to 8.0±0.2
Staphylococcus aureus ATCC 6538P	50-100		Erythromycin estolate, Framycetin sulphate, Genatamicin sulphate, Gramicidin, Kanamycin monosulphate, Kanamycin acid sulphate, Neomycin sulphate, Spiramycin, Vancomycin hydrochloride. While assaying Josamycin and Josamycin sulphate adjust the pH of the medium to 8.0 ± 0.1
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 before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. British Pharmacopoeia, 2009, British Pharmacopoeia Commission
2. European Pharmacopoeia, 2009, European Department, for the quality of Medicines.
3. Rippere RA. Some principles of microbiological turbidimetric assays of antibiotics. J Assoc Off Anal Chem. 1979 62(4):951-6.
4. 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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