



Chloramphenicol

Cell Culture Tested

Product Code: TC204

Product Description:

Molecular Weight: 323.13 Molecular Formula: $C_{11}H_{12}Cl_2N_2O_5$ CAS No: 56-75-7 Synonym: ChloromycetinTM

Chloramphenicol is a prototypical broad spectrum antibiotic isolated from *Streptomyces venezuelae*. It acts by inhibiting protein synthesis at prokaryotic ribosomal level. It binds to 50S ribosomal subunit and prevents association of aminoacyl tRNA with ribosome. It is a broad spectrum antibiotic that exerts bactericidal effect on Gram-positive and Gram-negative bacteria as well as on anaerobes. Chloramohenicol can exert bacteriostatic effect when used at high concentration or against highly sensitive organisms.

In addition to its use as an anti-microbial agent to prevent contamination, it is also used to select transfectants in a wide variety of prokaryotic and eukaryotic cells. Resistance to chloramphenicol is conferred by a gene (Cm^r) that codes for an enzyme called chloramphenicol acetyltransferase (cat). This enzyme is a tetrameric cytosolic protein that, in the presence of acetyl coenzyme A, catalyzes the formation of hydroxyl acetoxy derivatives of chloramphenicol that are unable to bind to the ribosome. Thus chloramphenicol activity is inhibited.

Directions:

For cell culture applications, chloramphenicol is used at concentration of 5mg/L.

Preparation instructions:

Chloramphenicol is soluble in ethanol (50mg/ml), butanol, acetone and ethyl acetate, slightly soluble in water (2.5mg/ml) and insoluble in benzene, petroleum ether and vegetable oil.

Stock solutions of chloramphenicol are prepared in ethanol solution, sterilized by filtering through a sterile membrane filter with a porosity of 0.22micron or less and stored at refrigerated temperatures. Before use, the stock solution is diluted with water as per required concentration.

Quality Control:

Appearance White to grey-white crystals or powder Solubility 33.3 mg soluble in 1 mL of ethanol

pH (2.5% in water at 25°C) 4.50 -7.50

Specific rotation [alpha 20/D] $+17.0^{\circ}$ to $+20.0^{\circ}$ (c = 5% in ethanol)

Melting range 148 - 150°C

Chloride (Cl) NMT 0.0125%

Residue on ignition NMT 0.10%

Loss on drying NMT 0.50%

Assay (UV/HPLC) 98.00 -102.00%

Cell Culture Test Passes

Storage and Shelf Life:

Store choramphenicol powder at 10° to 30°C.

Shelf life is 36 months.

Stock solutions of chloramphenicol should be stored at 2 - 8° C and used within 30 days. Solutions can remain stable at 37° C for 5 days.

Aqueous solutions of chloramphenicol undergo photochemical decomposition in presence of light. Decomposition also occurs in presence of acidic and basic environment.

Use before expiry date given on product label.

Revision : 1 / 2013

Disclaimer :

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