

Specification

Chloramphenicol *BioChemica*

A1806

Solubility:	2.5 g/L
Physical Description:	Solid
Product Code:	A1806
Product Name:	Chloramphenicol <i>BioChemica</i>
Specifications:	Assay (photometr.): min. 98.5 % α 20°C/D; 5 % EtOH: +18.5° - +20.5° Sulfated ash: max. 0.1 % Loss on drying: max. 0.5 % Chloride: max. 0.01 %
Hazard pictograms	
WGK:	3
Storage:	RT
Signal Word:	Danger
GHS Symbols:	GHS08
H Phrases:	H350 H361d
P Phrases:	P201 P280 P308+P313 P405 P501
Molecular Formula:	$C_{11}H_{12}Cl_2N_2O_5$

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Specification

Chloramphenicol BioChemica

A1806

M:	323.13 g/mol
CAS:	56-75-7
EINECS:	200-287-4
CS:	29414000
<p>Comment</p> <p>Chloramphenicol was isolated from <i>Streptomyces venezuelae</i>. It is active against many gram positive and gram negative bacteria and actinomyces. Chloramphenicol inhibits the polysome formation and protein biosynthesis by binding to the bacterial ribosome. An inhibition of the protein biosynthesis in eukaryotes is observed at concentrations 20 - 100fold higher than those required for bacteria. The enzyme chloramphenicol acetyltransferase (CAT; EC 2.3.1.28; ref. 1) gives resistance to the antibiotic. Therefore, the corresponding gene is widely used as a selection marker on plasmids. The enzyme CAT has a relatively high content of histidine residues. This results in a copurification with His-tagged proteins on Ni NTA-columns (affinity chromatography), if the His-tagged protein was expressed in chloramphenicol-resistant <i>E. coli</i> strains. It is recommended not to use such bacterial strains for the expression of recombinant His-tagged proteins (2). Stability: The crystalline substance chloramphenicol is stable for approx. 5 years. In aqueous solutions, the stability depends on the temperature: At 100°C it is stable for 5 hours, at 37°C an inactivation of 50 % is observed after 6 months, at +5°C for 2 years. Stability is reduced at pH values above 9.5 by hydrolysis of the antibiotic. Chloramphenicol is water-soluble (2.5 - 4.4 mg/ml at 25 - 28°C), of low solubility at pH values between 5.5 and 7. Solubility in alcohol or ethyleneglycol (> 20 mg/ml) is significantly better. Stock solutions are prepared at concentrations of 10 mg/ml in Methanol or up to 34 mg/ml in Ethanol. Store the solutions at -20°C. The working concentration is 20 - 25 µg/ml for stringent plasmids and 170 µg/ml for relaxed plasmids.</p>	
<p>Bibliography</p> <p>(1)Shaw, W.V. (1975) <i>Methods Enzymol.</i> 43, 737-755 Chloramphenicol acetyltransferase from chloramphenicol-resistant bacteria. (2)Oswald, T. & Rinas, U. (1996) <i>Anal. Biochem.</i> 236, 357-358 Chloramphenicol-resistance interferes with the purification of 'His-tag' proteins. (3)Sambrook, J. & Russell, D.W. (2001) <i>Molecular Cloning: A Laboratory Manual</i>, 3rd Edition. Page A2.6. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.</p>	