

Specification

Cycloheximide *BioChemica*

A0879

Solubility:	21 g/L (H ₂ O)
Physical Description:	Solid
Product Code:	A0879
Product Name:	Cycloheximide <i>BioChemica</i>
Specifications:	Assay (HPLC): min. 98 % α20°C/D; 1 %, CHCl ₃ ; -26° - -32°
Hazard pictograms	
UN:	2811
Class/PG:	6.1/I
ADR:	6.1/I
IMDG:	6.1/I
IATA:	6.1/I
WGK:	3
Storage:	RT
Signal Word:	Danger
GHS Symbols:	GHS06 GHS08 GHS09
H Phrases:	H300 H341 H360D

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Specification

Cycloheximide *BioChemica*

A0879

	H411
P Phrases:	P262 P280 P302+P352 P309+P311
Molecular Formula:	C ₁₅ H ₂₃ NO ₄
M:	281.36 g/mol
CAS:	66-81-9
EINECS:	200-636-0
CS:	29419000
Index Nr.:	613-140-00-8
Comment	<p>Cycloheximide belongs to the group of the glutarimide antibiotics and has been isolated from <i>Streptomyces griseus</i>. It inhibits the binding of the aminoacyl-tRNA to the ribosomes, the transfer of amino acids from the aminoacyl-tRNA to the growing peptide chain and the release of the deacylated tRNA from the donor site of the ribosomes, as well as the translocation of the aminoacyl-tRNA from the acceptor site to the donor site of the ribosomes. The initiation of the peptide synthesis at reticulocyte ribosomes is stronger influenced, than the elongation of the peptide. The degradation and the reconstitution of polysomes is inhibited in several systems (1). The degradation of mRNA, as it has been shown for the <i>c-fos</i> mRNA, can be inhibited by cycloheximide, too (2). Inhibition of the protein biosynthesis leads, in the case of the so-called 'immediate early genes', to a superinduction by serum, with other words, to an increased transcription rate in response to the stimulus (3). Stability and solubility: Cycloheximide is watersoluble (2.1 g/100 ml at 2°C) or soluble in amyl acetate (7 g/100 ml). It is also soluble in chloroform, ether, acetone, methanol or ethanol. As a stock solution, prepare a filter-sterilized solution with a concentration of 10 mg/ml and store at -20°C. The working concentration is 10 µg/ml. Cycloheximide is rapidly inactivated at room temperature by diluted alkali. It is relatively heat-stable and acid-stable. Boiling at pH 7 for 15 minutes will not inactivate Cycloheximide, while boiling for one hour will destroy it. At pH 2 it is not destroyed by boiling for 1 hour.</p>
Bibliography	<p>(1)Obrig, T.G. <i>et al.</i> (1971) <i>J. Biol. Chem.</i> 246, 174-181The mechanism by which cycloheximide and related glutarimide antibiotics inhibit peptide synthesis in reticulocyte ribosomes. (2)Wilson, T. & Treisman, R. (1988) <i>Nature</i> 336, 396-399Removal of poly(A) and consequent degradation of <i>c-fos</i> - mRNA facilitated by 3' AU-rich sequences. (3)Subramaniam, M. <i>et al.</i> (1989) <i>Nature</i> 340, 64-66Negative regulation of serum-responsive enhancer elements.</p>