

Product Name: Cycloheximide

Catalog No.: 0970

Batch No.: 8

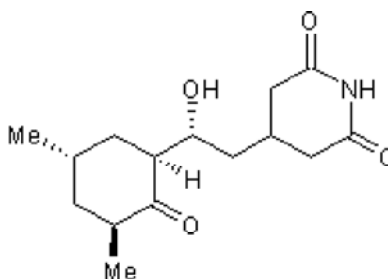
CAS Number: 66-81-9

EC Number: 200-636-0

IUPAC Name: 4-[2-(3,5-Dimethyl-2-oxo-cyclohexyl)-2-hydroxyethyl]-2,6-piperidinedione

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₅H₂₃NO₄
Batch Molecular Weight: 281.35
Physical Appearance: White solid
Solubility: ethanol to 50 mM
 water to 25 mM
Storage: Desiccate at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.6% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Optical Rotation: [α]_D = -27 (Concentration = 1, Solvent = Chloroform)
Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	64.04	8.24	4.98
Found	64.26	8.36	4.99

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Cycloheximide is a selective inhibitor of eukaryotic (over prokaryotic) protein synthesis, blocking tRNA binding and release from ribosomes. Induces apoptosis in a variety of transformed and normal cell lines, including T cells. Competitively inhibits the PPIase hFKBP12 ($K_i = 3.4 \mu\text{M}$). Also inhibits ferroptosis. Antifungal antibiotic. Exhibits anti-MERS-CoV activity in Vero cells in vitro ($\text{IC}_{50} = 0.16 \mu\text{M}$).

Physical and Chemical Properties:

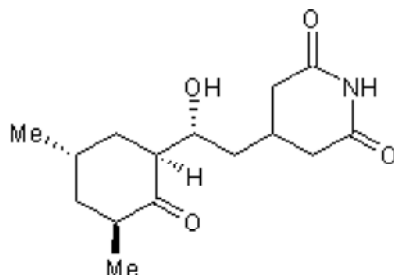
Batch Molecular Formula: $\text{C}_{15}\text{H}_{23}\text{NO}_4$

Batch Molecular Weight: 281.35

Physical Appearance: White solid

Minimum Purity: $\geq 97\%$

Batch Molecular Structure:



Storage: Desiccate at RT

Solubility & Usage Info:

ethanol to 50 mM

water to 25 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Ko et al (2021) Screening of FDA-approved drugs using a MERS-CoV clinical isolate from South Korea identifies potential therapeutic options for COVID-19. *Viruses* **13**. PMID: 33918958.

Xie et al (2016) Ferroptosis: process and function. *Cell.Death.Differ.* **23** 369. PMID: 26794443.

Christner et al (1999) Synthesis and cytotoxic evaluation of cycloheximide derivatives as potential inhibitors of FKBP12 with neuroregenerative properties. *J.Med.Chem.* **42** 3615. PMID: 10479292.

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bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel:+1 612 379 2956