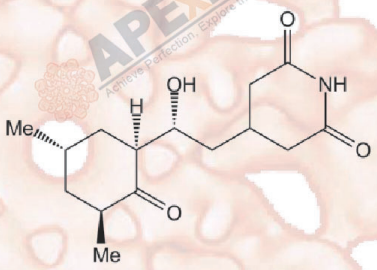
Product Data Sheet

Cycloheximide

Cat. No.: A8244
CAS No.: 66-81-9
Formula: C15H23NO4
M.Wt: 281.4
Synonyms: Naramycin A; Actidione; 3-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]glutarimide
Target: Apoptosis
Pathway: Apoptosis Inducers
Storage: Store at -20°C



Solvent & Solubility

In Vitro

≥14.05 mg/mL in H2O with gentle warming and ultrasonic; ≥112.8 mg/mL in DMSO; ≥57.6 mg/mL in EtOH

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	3.5537 mL	17.7683 mL	35.5366 mL
5 mM	0.7107 mL	3.5537 mL	7.1073 mL
10 mM	0.3554 mL	1.7768 mL	3.5537 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary	Antibiotic,inhibitor of protein synthesis in eukaryotes
IC_{50} & Target	

In Vitro

Cell Viability Assay

Cell Line:	SGBS preadipocytes
Preparation method:	The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.

	Reacting conditions:	10 μg/ml, 9 hours
	Applications:	Addition of CHX enhanced CD95-induced cleavage of caspase-8 into p43/p41 intermediate and p18 active fragments as well as proteolytic turnover of the proenzyme form of caspase-8 after 1, 3, 6, and 9 h. In addition, CHX increased cleavage of caspase-3 into the active p20/17 fragment at these time points. At later time points (24, 48, and 72 h), a decrease in the p55 pro-form of caspase-8 and the p35 pro-form of caspase-3 was observed. Interestingly, α-APO-1 alone induced caspase-8 and caspase-3 cleavage (3, 6, 9 h) although there is no induction of cell death after 24 h. Involvement of caspase-cleavage was confirmed by the use of the caspase inhibitor Z-VAD.fmk, which reduced CD95- and CHX-induced apoptosis. Apoptosis was rescued by ~50% pointing to a potential role of caspase-independent cell death in SGBS preadipocytes.
In Vivo	**Animal experiment**	
	Animal models:	Sprague Dawley rat pups
	Dosage form:	Intraperitoneal injection, 0.6 mg/kg, 0, 6, 12 or 24 hr
	Applications:	The hypoxia-ischemia model was set up using the rat pups. The hypoxia-ischemia control group (HI) and hypoxia-ischemia were treated with cycloheximide treatment group at 0, 6, 12, 24 and 24 hr after HI (HI_0, 6, 12, 24), respectively. Infarct volume, as measured by morphometric analysis of infarct areas with TTC, was significantly reduced by 92% and 61% when cycloheximide was given 0 or 6 hr after HI respectively, but showed an insignificant trend in infarct reduction if cycloheximide was administered 12 hr after HI compared to the HI control group, and no protective effect was observed when administration was delayed until 24 hr after HI.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

1. Shan F, Mei S, et al. "A telomerase subunit homolog La protein from Trypanosoma brucei plays an essential role in ribosomal biogenesis." FEBS J. 2019 Apr 16.PMID:30993866

2. Song J, Yuan C, et al. "Novel flavagline-like compounds with potent Fli-1 inhibitory activity suppress diverse types of leukemia." FEBS J. 2018 Dec;285(24):4631-4645.PMID:30387554

3. Xiao G, Li Y, et al. "FBXW7 suppresses epithelial-mesenchymal transition and chemo-resistance of non-small-cell lung cancer cells by targeting snai1 for ubiquitin-dependent degradation." Cell Prolif. 2018 Aug 9:e12473.PMID:30094882

4. Bao Y, Yang F, et al. "Angiopoietin-like protein 3 blocks nuclear import of FAK and contributes to sorafenib response." Br J Cancer. 2018 Jul 23.PMID:30033448

5. Ji J, Xu R, et al. "Actin like-6A promotes glioma progression through stabilization of transcriptional regulators YAP/TAZ."Cell Death Dis. 2018 May 3;9(5):517.PMID:29725063

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References

[1] Fischer-Posovszky P, Keuper M, Nagel S, et al. Downregulation of FLIP by cycloheximide sensitizes human fat cells to CD95-induced apoptosis. Experimental cell research, 2011, 317(15): 2200-2209.

[2] Park W S, Sung D K, Kang S, et al. Therapeutic window for cycloheximide treatment after hypoxic-ischemic brain injury in neonatal rats. Journal of Korean medical science, 2006, 21(3): 490-494.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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