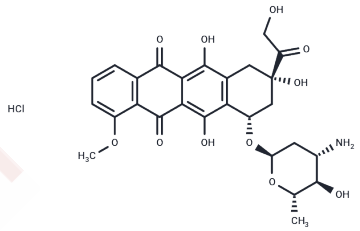
Data Sheet (Cat.No.T0125)

TargetMol

Epirubicin hydrochloride

Chemical Properties



CAS No. : 56390-09-1

Formula: C27H30ClNO11

Molecular Weight: 579.98

Storage: Store at low temperature,Store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Epirubicin hydrochloride (Pharmorubicin) is an adriamycin derivative, a topoisomerase (Topo) inhibitor, and a Forkhead box protein p3 (Foxp3) inhibitor. Epirubicin hydrochloride has antitumor activity.
Targets(IC50)	Apoptosis,Antibiotic,DNA/RNA Synthesis,Topoisomerase
In vitro	**METHODS**: Neuroglioma cells U-87 and neuronal primary cultures were treated with Epirubicin hydrochloride (0.5-100 μM) for 48 h. Cell viability was measured by MTT assay. **RESULTS**: Epirubicin significantly reduced the viability of rat U-87 cells in a concentration-dependent manner, with an IC50 of 6.3 μM. In contrast to U-87 glioma cells, rat normal neuronal cells were resistant to Epirubicin. [1] **METHODS**: Human breast cancer cells MDA-MB-231 and SK-BR-3 were treated with Epirubicin hydrochloride (2-3 μM) for 48 h, and apoptosis was detected by Flow cytometry. **RESULTS**: Epirubicin significantly increased sub-G cells in G2/M block. [2]
In vivo	**METHODS**: To test the antitumor activity in vivo, Epirubicin hydrochloride (7 mg/kg) was administered intravenously three times at four-day intervals to BALB/c nu/nu nude mice bearing MDA-MB-231 xenografts. **RESULTS**: Epirubicin reduced tumor growth by half and resulted in a more than 10% weight loss. the IR value of Epirubicin at 7 mg/kg was 53.3%. [2]
Cell Research	Hep G2 cells (500 cells/well, monolayer) are plated in a 96-well plate. The next day the cells are treated with Epirubicin in the medium. At the end of the incubation periods, 15% volume of MTT dye solution is added. After 1 hr of incubation at 37℃, an equal volume of solubilization/stop solution (dimethylsul-foxide) is added to each well for an additional 1 hr incubation. The absorbance of the reaction solution at 570 nm is recorded.(Only for Reference)

Solubility Information

Solubility	DMSO: 42.86 mg/mL (73.9 mM),Sonication is recommended. Ethanol: 5.8 mg/mL (10 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	5% DMSO+95% Saline: 2.9 mg/mL (5 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7242 mL	8.621 mL	17.242 mL
5 mM	0.3448 mL	1.7242 mL	3.4484 mL
10 mM	0.1724 mL	0.8621 mL	1.7242 mL
50 mM	0.0345 mL	0.1724 mL	0.3448 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Wang XF, et al. Epirubicin inhibits growth and alters the malignant phenotype of the U-87 glioma cell line. Mol Med Rep. 2015 Oct;12(4):5917-23.
Huang Y, Wang H, Hao Y, et al. Myeloid PTEN promotes chemotherapy-induced NLRP3-inflammasome activation and antitumour immunity. Nature Cell Biology. 2020: 1-12. (22-6 , 716-727)
Qian S, Han Y, Zhang Y, et al.Discovery of AHCY as an Off-Target of Doxorubicin by Integrative Analysis of Photoaffinity Labeling Chemoproteomics and Untargeted Metabolomics.Analytical Chemistry.2022
Guo W, et al. Inhibiting autophagy increases epirubicin's cytotoxicity in breast cancer cells. Cancer Sci. 2016 Nov; 107(11):1610-1621.
Harada M, et al. Improved anti-tumor activity of stabilized anthracycline polymeric micelle formulation, NC-6300. Cancer Sci. 2011 Jan;102(1):192-9.
Zhang S, Kim E J, Huang J, et al.NEAT1 repression by MED12 creates chemosensitivity in p53 wild-type breast cancer cells.The FEBS Journal.2024
Asanuma F, et al. Folia Microbiol (Praha), 1998, 43(5), 473-474.
Huang Y, Wang H, Hao Y, et al. Myeloid PTEN promotes chemotherapy-induced NLRP3-inflammasome activation and antitumour immunity[J]. Nature Cell Biology. 2020: 1-12. (22-6 , 716-727)