

## Daunorubicin

## Chemical Properties

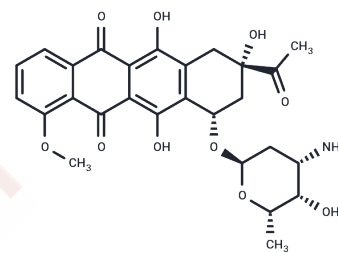
CAS No. : 20830-81-3

Formula: C<sub>27</sub>H<sub>29</sub>NO<sub>10</sub>

Molecular Weight: 527.52

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	Daunorubicin is an anthracycline antibiotic and topoisomerase II inhibitor with anticancer activity, inhibiting DNA and RNA synthesis, and is commonly used to treat acute myeloid leukaemia (AML) and acute lymphoblastic leukaemia (ALL).
Targets(IC50)	Apoptosis, Antibacterial, Antibiotic, Autophagy, ADC Cytotoxin, DNA/RNA Synthesis, Topoisomerase
In vitro	<p><b>Methods:</b> Human T-lymphoblastic leukemia cell line Molt-4 and metastatic human pancreatic cancer cell line L3.6 were treated with various concentrations of Daunorubicin (7 nM–1.9 μM) and incubated for 72 hours to assess cell viability.</p> <p><b>Results:</b> Daunorubicin significantly inhibited cell viability, with IC<sub>50</sub> values of 40 nM for Molt-4 cells and 400 nM for L3.6 cells.[1][2]</p>
In vivo	<p><b>Methods:</b> Male Sprague-Dawley rats were used as the animal model and administered Daunorubicin via intravenous injection at a dose of 3 mg/kg, three times at 48-hour intervals.</p> <p><b>Results:</b> Daunorubicin treatment significantly increased malondialdehyde (MDA) levels in renal tissue and markedly decreased total glutathione peroxidase (GPx) activity. It also caused elevated urinary protein excretion, serum creatinine, and blood urea nitrogen (BUN) levels. [3]</p>

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	1.8957 mL	9.4783 mL	18.9566 mL
5 mM	0.3791 mL	1.8957 mL	3.7913 mL
10 mM	0.1896 mL	0.9478 mL	1.8957 mL
50 mM	0.0379 mL	0.1896 mL	0.3791 mL

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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

Svensson SP, et al. Melanin inhibits cytotoxic effects of Doxorubicin and Daunorubicin in MOLT 4 cells. *Pigment Cell Res.* 2003 Aug;16(4):351-4.

Gervasoni JE Jr, et al. An effective in vitro antitumor response against human pancreatic carcinoma with paclitaxel and Daunorubicin by induction of both necrosis and apoptosis. *Anticancer Res.* 2004 Sep-Oct;24(5A):2617-26.

Arozal W, et al. Telmisartan prevents the progression of renal injury in daunorubicin rats with the alteration of angiotensin II and endothelin-1 receptor expression associated with its PPAR- $\gamma$  agonist actions. *Toxicology.* 2011 Jan 11;279(1-3):91-9.

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