

Daun02

Chemical Properties

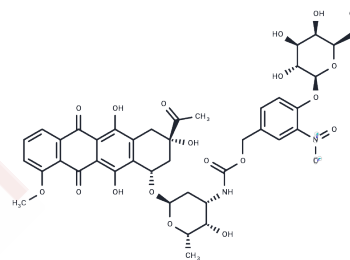
CAS No. : 290304-24-4

Formula: C₄₁H₄₄N₂O₂₀

Molecular Weight: 884.79

Storage: 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	Daun02 is the topoisomerase inhibitor Daunorubicin prodrug.
Targets(IC50)	ADC Cytotoxin, Topoisomerase
In vitro	Daun02 is converted by β -galactosidase to Daunorubicin, which has been shown to reduce Ca ²⁺ -dependent action potentials in neuroblastoma cells [1]. Daun02 is a good substrate for β -galactosidase (β -gal) and it also is a topoisomerase inhibitor [2]. The concentration of Daun02 producing 50% (EC50) decrease in cell viability is 0.5 μ M, 1.5 μ M, and 3.5 μ M for T47-D, Panc02, and MCF-7, respectively [3].
In vivo	Daun02 is an efficient substrate for β -gal (Km: 0.37 mM; Vmax: 8.6 μ mol/min/mg). It demonstrates 79% plasma protein binding, compared to 94% for Daunomycin at 10 μ M [3].

Solubility Information

Solubility	DMSO: 100 mg/mL (113.02 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (3.73 mM), Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1302 mL	5.6511 mL	11.3021 mL
5 mM	0.226 mL	1.1302 mL	2.2604 mL
10 mM	0.113 mL	0.5651 mL	1.1302 mL
50 mM	0.0226 mL	0.113 mL	0.226 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

- Koya E, et al. Targeted disruption of cocaine-activated nucleus accumbens neurons prevents context-specific sensitization. *Nat Neurosci.* 2009 Aug;12(8):1069-73.
- Lehmann M, et al. Activity of topoisomerase inhibitors daunorubicin, idarubicin, and aclarubicin in the *Drosophila* Somatic Mutation and Recombination Test. *Environ Mol Mutagen.* 2004;43(4):250-7.
- Farquhar D, et al. Suicide gene therapy using *E. coli* beta-galactosidase. *Cancer Chemother Pharmacol.* 2002 Jul;50(1):65-70.

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