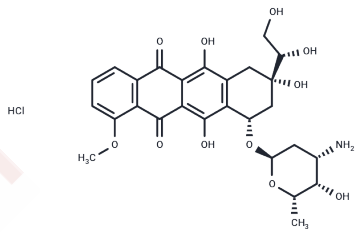
Data Sheet (Cat.No.T40736)

TargetMol

Doxorubicinol hydrochloride

Chemical Properties



CAS No. : 63950-05-0

Formula: C27H32ClNO11

Molecular Weight: 582.0

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	Doxorubicinol hydrochloride, also known as 13-Dihydroadriamycin hydrochloride, is a secondary alcohol metabolite derived from Doxorubicin.
Targets(IC50)	Others,Drug Metabolite
In vitro	Doxorubicinol hydrochloride is generated through a two-electron, NADPH-dependent reduction of the Doxorubicin (C13) side-chain carbonyl group, resulting in a secondary alcohol[1]. Compared to Doxorubicin (DOX), Doxorubicinol hydrochloride exhibits substantially reduced DNA binding activity. Unlike Doxorubicin, which primarily accumulates in the nucleus, Doxorubicinol hydrochloride is predominantly localized within the cytoplasm or lysosomes[1].
In vivo	In vivo studies on tumor-bearing mice have demonstrated that Nilotinib, functioning as an ABCB1 inhibitor, enhances the accumulation of Doxorubicin and Doxorubicinol hydrochloride in cancer tissues. This suggests that the diminished anticancer efficacy of Doxorubicinol hydrochloride may be due to its elevated affinity for ABC transporters, resulting in a reduced intracellular concentration[1]. Furthermore, when compared to wild-type mice, mdr1a(-/-) mice exhibit a 1.6-fold increase in the terminal half-life and a 1.2-fold increase in the area under the plasma concentration-time curve for Doxorubicin. Additionally, the retention of Doxorubicin and its metabolite Doxorubicinol hydrochloride is significantly extended in the hearts of mdr1a(-/-) mice[2].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7182 mL	8.5911 mL	17.1821 mL
5 mM	0.3436 mL	1.7182 mL	3.4364 mL
10 mM	0.1718 mL	0.8591 mL	1.7182 mL
50 mM	0.0344 mL	0.1718 mL	0.3436 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

Kamil Piska, et al. Metabolic carbonyl reduction of anthracyclines - role in cardiotoxicity and cancer resistance. Reducing enzymes as putative targets for novel cardioprotective and chemosensitizing agents. Invest New Drugs. 2017 Jun;35(3):375-385.

J van Asperen, et al. Increased accumulation of doxorubicin and doxorubicinol in cardiac tissue of mice lacking mdr1a P-glycoprotein. Br J Cancer. 1999 Jan;79(1):108-13.