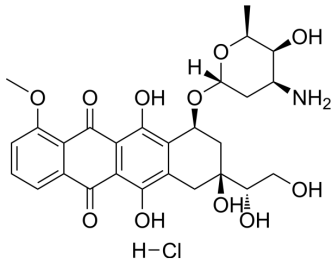
Doxorubicinol hydrochloride

Cat. No.:	HY-G0022
CAS No.:	63950-05-0
Molecular Formula:	$C_{27}H_{32}ClNO_{11}$
Molecular Weight:	582
Target:	Drug Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description	Doxorubicinol hydrochloride (13-Dihydroadriamycin hydrochloride) is a secondary alcohol metabolite of Doxorubicin[1].
In Vitro	Doxorubicinol hydrochloride is produced by a two-electron, NADPH-dependent reduction of the Doxorubicin side-chain carbonyl group (C13) to a secondary alcohol[1]. Doxorubicinol hydrochloride has been shown to have significantly lower DNA binding activity as compared to DOX. Moreover, while Doxorubicinol hydrochloride is retained in the cytoplasm or lysosomes, Doxorubicin is mainly accumulated in the nucleus[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	In vivo, in tumor-bearing mice, Nilotinib, acting as ABCB1 inhibitor, is found to increase the accumulation of Doxorubicin and Doxorubicinol hydrochloride in cancer tissues. This implies that weaker anticancer activity of Doxorubicinol hydrochloride may be related to its increased affinity to ABC transporters, thus leading to a lower intracellular concentration of the agent[1]. In comparison with wild-type mice, the terminal half-life and the area under the plasma concentration-time curve of Doxorubicin in mdr1a(-/-) mice are 1.6- and 1.2-fold higher respectively. The retention of both Doxorubicin and its metabolite Doxorubicinol hydrochloride in the hearts of mdr1a(-/-) mice is substantially prolonged[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. 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.

[2]. 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.

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