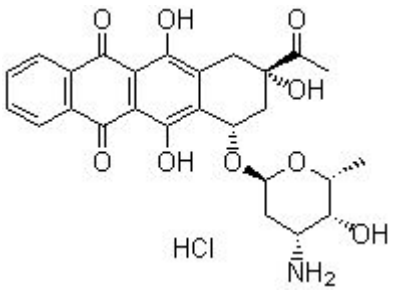
Product Introduction

Idarubicin HCl

Idarubicin HCl is a hydrochloride salt form of Idarubicin which is an anthracycline antibiotic and a DNA topoisomerase II (topo II) inhibitor for MCF-7 cells with IC50 of 3.3 ng/mL.

Technical Data:

Molecular Weight (MW):	533.95	
Formula:	$C_{26}H_{27}NO_9.HCl$	
Solubility (25°C) * <1 mg/ml means slightly soluble or insoluble:	DMSO 100 mg/mL	
	Water 9 mg/mL	
	Ethanol <1 mg/mL	
Purity:	>98%	
Storage:	3 years -20℃Powder	
	6 months-80℃in DMSO	
CAS No.:	57852-57-0	

Biological Activity

Idarubicin has significant cytotoxic activity against multicellular spheroids, comparable to the antiproliferative effects on monolayer cells. [1] Idarubicin inhibits CYP450 2D6. Idarubicin is much more effective than doxorubicin or epirubicin. [2] Idarubicin is about 57.5-fold and 25-fold more active, respectively. Idarubicin is able to overcome P-glycoprotein-mediated multidrug resistance. [3] Idarubicin inhibits PMN superoxide radical formation. [4] Idarubicin could be coupled to the monoclonal antibodies (anti-Ly-2.1, anti-L3T4, or anti-Thy-1) with retention of protein solubility and antibody activity. [5]

Idarubicin inhibits the proliferation of NALM-6 cells with an IC50 of 12 nM. [6]

Reduction of Idarubicin is dependent upon ketone reductases, and proceeds more stereoselectively than that of most ketones giving rise to the (13S)-epimer almost exclusively. The high stereospecificity in Idarubicin reduction might result from chiral induction due to the presence of asymmetric centres near to the carbonyl group in Idarubicin. [7]

Idarubicin is a substrate for CYP450 2D6 and 2C9.

References

[1] Orlandi P, et al. J Chemother. 2005, 17(6), 663-667.

[2] Colburn DE, et al. Hematology. 2004, 9(3), 217-221.

[3] Siegsmund MJ, et al. Eur Urol. 1997, 31(3), 365-370.

[4] Cairo MS, et al. J Leukoc Biol. 1990, 47(3), 224-233.

[5] Smyth MJ, et al. Transplantation. 1988, 46(1), 126-131.

[6] Rowland AJ, et al. Cancer Immunol Immunother. 1993, 37(3), 195-202.

[7] Strolin Benedetti M, et al. Xenobiotica. 1991, 21(4), 473-480.

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