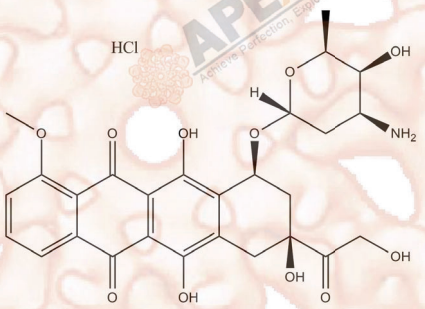
Product Data Sheet

Doxorubicin (Adriamycin) HCl

Cat. No.:	A1832
CAS No.:	25316-40-9
Formula:	C27H29NO11·HCl
M.Wt:	579.98
Synonyms:	
Target:	DNA Damage/DNA Repair
Pathway:	Topoisomerase
Storage:	Store at -20°C



Solvent & Solubility

In Vitro

≥29 mg/mL in DMSO; ≥57.2 mg/mL in H2O; insoluble in EtOH

Preparing Stock Solutions

Concentration \ Mass / Solvent	1mg	5mg	10mg
1 mM	1.7242 mL	8.6210 mL	17.2420 mL
5 mM	0.3448 mL	1.7242 mL	3.4484 mL
10 mM	0.1724 mL	0.8621 mL	1.7242 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary	Antitumour antibiotic,inhibits TOPO II.
IC_{50} & Target	100 nM (MCF-7)

In Vitro

Cell Viability Assay

Cell Line:	H9c2 cells
Preparation method：	The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.
Reacting conditions:	1 μg/ml, 2 hours
Applications:	H9c2 cells were treated with increased concentrations of Doxorubicin (0.1, 0.3,

		0.5, and 1.0 μg/ml, equal to 0.17, 0.52, 0.85, and 1.71 μM separately) for 2 h, or treated with 0.3 μg/ml (equal to 0.52 μM) of Doxorubicin for the different time points. Doxorubicin induces strong AMPKα (Thr 172) and its downstream Acetyl-CoA carboxylase (ACC, Ser 79) phosphorylation in both time- and dose-dependent manner. AMPKα phosphorylation became obvious after 1 h of Doxorubicin treatment which was further sustained for at least 6 h. LKB1, the possible upstream kinase for AMPK, was also activated by Doxorubicin in H9c2 cells.
In Vivo	**Animal experiment**	
	Animal models:	C57BL/10 mice
	Dosage form:	Intraperitoneal injection, 20 mg/kg
	Applications:	Five days after doxorubicin injection, mice displayed significantly impaired systolic (LVP, -29%; dP/dtmax, -45%), diastolic (dP/dtmin, -44%; stiffness, +275%), and global (SV, -61%; HR, -18%; CO,-68%) left ventricular (LV) function when compared with the placebo group. Both cardiac lipid peroxidation activity (+37%) and cardiac nitrotyrosine protein expression (+204%) were increased when compared with placebo mice.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

1. Lin KH, Xie A, et al. "Systematic Dissection of the Metabolic-Apoptotic Interface in AML Reveals Heme Biosynthesis to Be a Regulator of Drug Sensitivity." Cell Metab. 2019 Feb 5. pii: S1550-4131(19)30011-7.PMID:30773463

2. Andrew Goodspeed, Annie Jean, et al. "Low MSH2 protein levels identify muscle-invasive bladder cancer resistant to cisplatin." bioRxiv. 2018 June 29.

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References

[1] Chen M B, Wu X Y, Gu J H, et al. Activation of AMP-activated protein kinase contributes to doxorubicin-induced cell death and apoptosis in cultured myocardial H9c2 cells. Cell biochemistry and biophysics, 2011, 60(3): 311-322.

[2] Riad A, Bien S, Westermann D, et al. Pretreatment with statin attenuates the cardiotoxicity of Doxorubicin in mice. Cancer research, 2009, 69(2): 695-699.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable

under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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