

Product data sheet



MedKoo Cat#: 100450 Name: Idarubicin HCl CAS: 57852-57-0 (HCl) Chemical Formula: C ₂₆ H ₂₈ ClNO ₉ Molecular Weight: 533.958		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Idarubicin is a semisynthetic 4-demethoxy analogue of the antineoplastic anthracycline antibiotic daunorubicin. Idarubicin intercalates into DNA and interferes with the activity of topoisomerase II, thereby inhibiting DNA replication, RNA transcription and protein synthesis. Due to its high lipophilicity, idarubicin penetrates cell membranes more efficiently than other anthracycline antibiotic compounds.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	10.0	18.73
DMSO	64.44	120.69
DMSO:PBS (pH 7.2) (1:1)	0.5	0.94
Water	7.0	13.11

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.87 mL	9.36 mL	18.73 mL
5 mM	0.37 mL	1.87 mL	3.75 mL
10 mM	0.19 mL	0.94 mL	1.87 mL
50 mM	0.04 mL	0.19 mL	0.37 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Kinnunen U, Syrjälä H, Koistinen P, Koskela M. Idarubicin inhibits the growth of bacteria and yeasts in an automated blood culture system. *Eur J Clin Microbiol Infect Dis*. 2009 Mar;28(3):301-3. doi: 10.1007/s10096-008-0613-4. Epub 2008 Sep 2. PMID: 18763001.
- Orlandi P, Barbara C, Bocci G, Fioravanti A, Di Paolo A, Del Tacca M, Danesi R. Idarubicin and idarubicinol effects on breast cancer multicellular spheroids. *J Chemother*. 2005 Dec;17(6):663-7. doi: 10.1179/joc.2005.17.6.663. PMID: 16433198.

In vivo study

- Goel SA, Guo LW, Wang B, Guo S, Roenneburg D, Ananiev GE, Hoffmann FM, Kent KC. High-throughput screening identifies idarubicin as a preferential inhibitor of smooth muscle versus endothelial cell proliferation. *PLoS One*. 2014 Feb 24;9(2):e89349. doi: 10.1371/journal.pone.0089349. Erratum in: *PLoS One*. 2014;9(10):e110098. PMID: 24586708; PMCID: PMC3933427.

7. Bioactivity

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Biological target:

Idarubicin hydrochloride is an anthracycline antileukemic drug. It inhibits the topoisomerase II interfering with the replication of DNA and RNA transcription. Idarubicin hydrochloride inhibits the growth of bacteria and yeasts.

In vitro activity

Idarubicin inhibited the growth of all of the five gram-positive cocci, one of five gram-negative rods and one of three yeast strains studied in the standard bottles but not in the FAN bottles.

Reference: Eur J Clin Microbiol Infect Dis. 2009 Mar;28(3):301-3. <https://pubmed.ncbi.nlm.nih.gov/18763001/>

In vivo activity

The morphometric data show that on day 14 after angioplasty, an aggressive neointimal plaque develops (see vehicle control, Figure 5A). However, rat arteries treated with idarubicin were found to have an 80% reduction in intimal hyperplasia (Figure 5B and C) compared to vehicle control.

Reference: PLoS One. 2014 Feb 24;9(2):e89349. <https://pubmed.ncbi.nlm.nih.gov/24586708/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.