

PRODUCT INFORMATION



Daunorubicin (hydrochloride)

Item No. 14159

CAS Registry No.: 23541-50-6
Formal Name: 8S-acetyl-10S-[(3-amino-2,3,6-trideoxy- α -L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-5,12-naphthacenedione, monohydrochloride

Synonyms: NDC 0082-4155, Ondena, RP 13057

MF: $C_{27}H_{29}NO_{10} \cdot HCl$

FW: 564.0

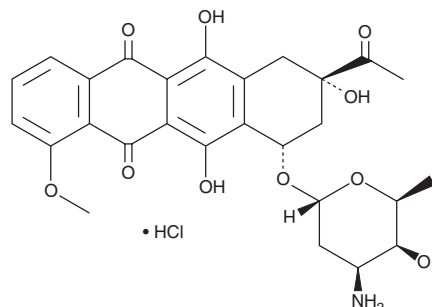
Purity: $\geq 98\%$

UV/Vis.: λ_{max} : 234, 251, 288, 480 nm

Supplied as: A crystalline solid

Storage: $-20^{\circ}C$

Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Daunorubicin (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the daunorubicin (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Daunorubicin (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of daunorubicin (hydrochloride) in these solvents is approximately 0.5, 10, and 20 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of daunorubicin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of daunorubicin (hydrochloride) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Daunorubicin is an antitumor antibiotic.¹ At 0.2-1 μ M, daunorubicin induces apoptosis in mature monocytic U937 and myelocytic HL-60 acute myeloid leukemia (AML) cells. However, immature AML cells (CD 34⁺-KG1a, -KG1, or -HEL cells) appear resistant to apoptosis at similar concentrations.¹ In mature AML cells, daunorubicin has been shown to trigger a reactive oxygen species-dependent sphingomyelin-ceramide pathway that activates the MEKK1-SEK1-JNK cascade leading to enhanced DNA binding activity of the transcription factor AP-1.^{1,2}

References

1. Laurent, G. and Jaffrézou, J.P. Signaling pathways activated by daunorubicin. *Blood* **98**(4), 913-924 (2001).
2. Bose, R., Verheij, M., Haimovitz-Friedman, A., *et al.* Ceramide synthase mediates daunorubicin-induced apoptosis: An alternative mechanism for generating death signals. *Cell* **82**(3), 405-414 (1995).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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