

PRODUCT INFORMATION



Daunorubicin-¹³C-d₃

Item No. 29101

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-¹³C-d₃)-5,12-naphthacenedione

MF: C₂₆[¹³C]H₂₆D₃NO₁₀

FW: 531.5

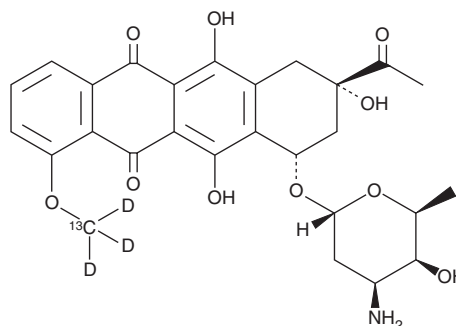
Chemical Purity: $\geq 85\%$ (Daunorubicin)

Deuterium Incorporation: $\geq 99\%$ deuterated forms (d₁-d₃); $\leq 1\%$ d₀

Supplied as: A solid

Storage: -20°C

Stability: ≥ 4 years



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

Laboratory Procedures

Daunorubicin-¹³C-d₃ is intended for use as an internal standard for the quantification of daunorubicin (Item No. 14159) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Daunorubicin-¹³C-d₃ is supplied as a solid. A stock solution may be made by dissolving the daunorubicin-¹³C-d₃ in the solvent of choice, which should be purged with an inert gas. Daunorubicin-¹³C-d₃ is slightly soluble in DMSO.

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 (CD34⁺-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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