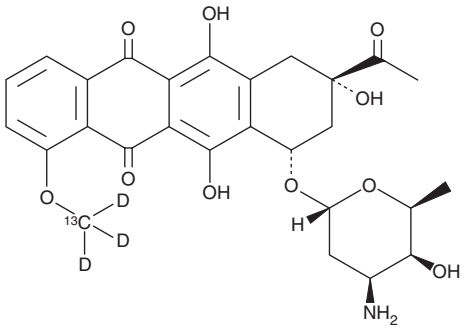
PRODUCT INFORMATION

Daunorubicin-^{13}C-d$_3$

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-^{13}C-d$_3$)-5,12-naphthacenedione
MF:	$C_{26}[^{13}C]H_{26}D_3NO_{10}$
FW:	531.5
Chemical Purity:	≥85% (Daunorubicin)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_3); ≤1% d_0
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-^{13}C-d$_3$ 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-^{13}C-d$_3$ is supplied as a solid. A stock solution may be made by dissolving the daunorubicin-^{13}C-d$_3$ in the solvent of choice, which should be purged with an inert gas. Daunorubicin-^{13}C-d$_3$ is slightly soluble in DMSO.

Description

Daunorubicin is an antitumor antibiotic.[1] At 0.2-1 µM, 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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM