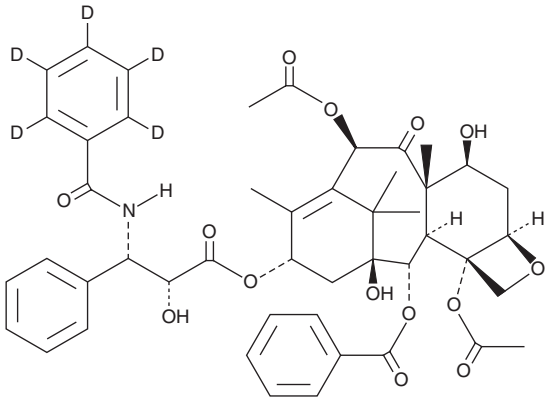
PRODUCT INFORMATION

Paclitaxel-d_5

Item No. 22092

CAS Registry No.: 1129540-33-5
Formal Name: βS-(benzoyl-2,3,4,5,6-d_5-amino)-αR-hydroxy-benzenepropanoic acid, (2aR,4S,4aS,6R,9S,11S,12S,12aR,12bS)-6,12b-*bis*(acetyloxy)-12-(benzoyloxy)-2a,3,4,4a,5,6,9,10,11,12,12a,12b-dodecahydro-4,11-dihydroxy-4a,8,13,13-tetramethyl-5-oxo-7,11-methano-1H-cyclodeca[3,4]benz[1,2-b]oxet-9-yl ester
MF: $C_{47}H_{46}D_5NO_{14}$
FW: 859.0
Chemical Purity: ≥98% (Paclitaxel)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥3 years



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

Laboratory Procedures

Paclitaxel-d_5 contains five deuterium atoms. It is intended for use as an internal standard for the quantification of paclitaxel (Item No. 10461) 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).

Paclitaxel-d_5 is supplied as a solid. A stock solution may be made by dissolving the paclitaxel-d_5 in the solvent of choice. Paclitaxel-d_5 is slightly soluble in methanol and chloroform.

Description

Paclitaxel is cytotoxic against a variety of cancer cell lines with IC_{50} values ranging from 2.5-7.5 nM.[1] It disrupts multipolar spindle formation, inducing cell cycle arrest in various human cell cancer lines (IC_{50}s = 6.7-18.5 nM) at both prophase and G_1.[2] It also initiates apoptosis of cancer cells through multiple mechanisms involving p53-dependent and -independent pathways, Bcl-2 family members, cyclin-dependent kinases, and c-Jun N-terminal kinases/stress-activated protein kinases.[3]

References

1. Liebmann, J.E., Cook, J.A., Lipschultz, C., *et al.* Cytotoxic studies of paclitaxel (Taxol) in human tumour cell lines. *Br. J. Cancer* **68(6)**, 1104-1109 (1993).
2. Woods, C.M., Zhu, J., McQueney, P.A., *et al.* Taxol-induced mitotic block triggers rapid onset of a p53-independent apoptotic pathway. *Mol. Med.* **1(5)**, 506-526 (1995).
3. Wang, T.h., Wang, H.S., and Soong, Y.K. Paclitaxel-induced cell death: Where the cell cycle and apoptosis come together. *Cancer* **88(11)**, 2619-2628 (2000).

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