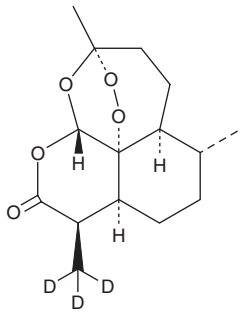
PRODUCT INFORMATION

Artemisinin-d_3

Item No. 25359

CAS Registry No.:	176652-07-6
Formal Name:	[3R-(3α,5aβ,6β,8aβ,9α,12β,12aR*)]-octahydro-3,6-dimethyl-9-(methyl-d_3)-3,12-epoxy-12H-pyrano[4,3-j]-1,2-benzodioxepin-10(3H)-one
MF:	$C_{15}H_{19}D_3O_5$
FW:	285.4
Chemical Purity:	≥98% (Artemisinin)
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

Artemisinin-d_3 is intended for use as an internal standard for the quantification of artemisinin (Item No. 11816) 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).

Artemisinin-d_3 is supplied as a solid. A stock solution may be made by dissolving the artemisinin-d_3 in the solvent of choice, which should be purged with an inert gas. Artemisinin-d_3 is slightly soluble in methanol and DMSO.

Description

Artemisinin is an endoperoxide antimalarial agent with anticancer activity.[1,2] It reduces the growth of various *P. falciparum* strains *in vitro* (IC_{50}s = 3.98-20.36 nM) and reduces parasitemia in mice infected with *P. falciparum* with a curative dose (CD_{50}) value of 140 mg/kg.[1,3] It also reduces *P. berghei* infection in mice (ED_{50} = 5.6 mg/kg per day).[4] Artemisinin (100-400 µM) induces cell cycle arrest in the G_0/G_1 phase and apoptosis and inhibits growth of SK-N-AS, BE(2)-C, SK-N-DZ, and SHEP1 neuroblastoma cells in a time- and concentration-dependent manner.[2] It also suppresses BE(2)-C cell colony formation in a soft agar assay and reduces tumor growth in a BE(2)-C mouse xenograft model. Formulations containing artemisinin have been used in combination therapies for the treatment of malaria.

References

1. Akoachere, M., Buchholz, K., Fischer, E., *et al. Antimicrob. Agents Chemother.* **49(11)**, 4592-4597 (2005).
2. Zhu, S., Liu, W., Ke, X., *et al. Oncol. Rep.* **32(3)**, 1094-1100 (2014).
3. Robert, A., Benoit-Vical, F., Claparols, C., *et al. Proc. Natl. Acad. Sci. U.S.A.* **102(38)**, 13676-13680 (2005).
4. Chawira, A.N., Warhurst, D.C., Robinson, B.L., *et al. Trans. R. Soc. Trop. Med. Hyg.* **81(4)**, 554-558 (1987).

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